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**Minnesota Collaborative Agreement: Potential for Dental Hygienists to Increase
Direct Access for Underserved Populations**

By

Rachel Kashani-Legler

**A Thesis Submitted in Partial Fulfillment of the
Requirements for the Degree of
Master of Science**

In

Health Science: Community Health Education

Minnesota State University, Mankato

Mankato, Minnesota

May 2016

March 25, 2016

**Minnesota Collaborative Agreement: Potential for Dental Hygienists to Increase
Direct Access for Underserved Populations**

Rachel Kashani-Legler

**This thesis has been examined and approved by the following members of the
thesis committee.**

Dr. Judith Luebke, Advisor

Dr. Amy Hedman

Dr. Angela Monson

Abstract

Minnesota Collaborative Agreement: Potential for Dental Hygienists to Increase Direct Access for Underserved Populations

By Rachel Kashani-Legler, Minnesota State University, Mankato, MN

The purpose of this research study was to identify the strengths and limitations of the current Minnesota collaborative agreement (Statute 150A.10 subd. 1a “Limited Authorization for Dental Hygienists”) in addressing the oral health needs of unserved and underserved Minnesotans. Through the identification of needs and gaps in the collaborative agreement infrastructure, this research can inform and provide suggested guidelines for quality measures and policy recommendations. Data for this qualitative research study was collected by interviewing eight Collaborative Practice Dental Hygienists and nine Collaborative Dental Hygiene Practice Advisory Committee Members. An in-depth interview guide, containing 17 interview questions, was utilized for both groups of participants to identify strengths, limitations, and possible changes that need to be made to the collaborative agreement statute and /or direct access infrastructure in Minnesota. The research found that there are many benefits to practicing with a collaborative agreement, such as providing opportunities for underserved populations and the dental hygiene profession. However, many barriers were identified that impede the potential opportunities, namely lack of awareness and education regarding collaborative practice among the dental

profession, difficulty finding dentists to sign a collaborative agreement, and few referral sources. Many potential changes to the statute and collaborative agreement infrastructure were identified and presented as a means to improve the oral health of unserved and underserved Minnesotans.

Acknowledgements

I'd like to start with thanking my husband, Nic Legler, for always supporting me and our family, throughout my long educational journey. For the many, many days and nights that I had to be away working on school and you were there being a super father to our children; Nikko, Layla, and Bella. For filling in my shoes when I could not be there. For always being there for our family, for never giving up on me, and for being the rock that this family needed. Though I feel I had to sacrifice a lot to get to this point, so did you. Thank you for all that you have done and continue to do. I wouldn't have been able to reach my goals without you. I love you!

To my children, who always ask when I am going to "retire" from school, now your mommy is officially "retired". Sincere love and gratitude to my mother and mother-in-law, who have offered countless hours of support and assistance with the kids, so that I could fulfill my dreams. Thank you to my fathers, sisters, and brother who always believed in me. Also, a thank you to my friends and colleagues at Normandale Community College, for always putting up with me and giving me the support and encouragement that I needed. I feel so thankful to have all of you in my life!

An enormous thank you to my advisor Dr. Judith Luebke. You were there for me when I needed someone. You never gave up on me and always gave me the positive energy that I needed to continue. I've learned so much from you as an educator in Community Health Education, but more importantly I believe you

showed me what it is to be compassionate, kind, respectful, motivated, and a hard worker. You are an amazing person, educator, and friend. I will forever cherish the fond memories of my graduate school days, of which you played a huge role. Namaste my friend ☺

To the other members of my amazing support team at Minnesota State University, Mankato; Dr. Amy Hedman, Dr. Angela Monson, and Dr. Joseph Visker; your wisdom, commitment, and kindness will never be forgotten! Thank you from the bottom of my heart.

A sincere thank you to my colleague and friend Dr. Colleen Brickle, who inspired my interest in collaborative dental hygiene practice. Thank you for your inspiration, motivation, and dedication in assisting me with my efforts in obtaining a Master's degree. For your commitment to the field of dental hygiene and specifically to increasing access to oral health services for those who need it the most. I have learned so much from you and truly appreciate your support and guidance throughout the past year.

Lastly, I would like to express my sincere gratitude to the committee members and dental hygienists who took time out of their busy lives to assist in this research study. My hope is that together we can continue to increase access to quality dental hygiene and dental services for all Minnesotans, regardless of income. Thank you for all that each of you already do to improve the oral health of our fellow Minnesotans and for our profession of dental hygiene. Your compassion and dedication doesn't go unnoticed. Thank you!

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Chapter One: Introduction

Introduction

“Many Americans have access to some of the best oral health care in the world, yet there are millions that do not have access to the basic oral health care they need” (Sanders, 2012, p. 1). There are significant inequalities and disparities that exist in the oral health of Americans (U.S. Department of Health and Human Services [HHS], 2000). Oral health disparities exist across population groups at all ages; however individuals who are low- income, racial and ethnic minorities, older adults, children, pregnant women, people with special health care needs, or those living in rural areas, bear the brunt of oral diseases (Institute of Medicine [IOM] & National Research Council [NRC], 2011). Unfortunately, it is often those who need oral health care the most, who face the greatest challenges in obtaining it.

A groundbreaking report was released in 2000, by the former United States Surgeon General Dr. David Satcher, titled “Oral Health Care in America: A Report of the Surgeon General” (HHS, 2000). In this report, the U.S. Surgeon General referred to dental disease as a “silent epidemic”, and disclosed findings such as low awareness of oral health among the public, significant disparities among racial and socioeconomic groups, and the ensuing consequent health issues (HHS, 2000). In 2003, based on these findings, the Surgeon General “called for action” to expand the efforts of promoting oral health, improving quality of life, and eliminating oral health disparities, in part through increasing

access to oral health care for all Americans (HHS, 2003). While the Surgeon General is credited with increasing awareness of the importance of oral health and the existing issues in our country, oral health still remains largely ignored in health policy (IOM & NRC, 2011).

Oral health is an essential part of our everyday lives. It gives us the “ability to speak, smile, smell, taste, touch, chew, swallow, and convey our feelings and emotions through facial expressions” (Centers for Disease Control and Prevention [CDC], 2011, p. 2). Oral health is also integral to overall health. Poor oral health includes a range of different conditions, but most prevalent are dental caries (tooth decay) and periodontal (gum) diseases (HHS, 2000). Fortunately, poor oral health can be prevented with regular access to dental care and effective patient education. Professional prophylaxis (cleanings), fluoride, and sealant application are all proven methods of preventing oral disease (CDC, 2011). Preventive oral health measures are intended to defend against the onset of oral disease and are the most cost-effective way to ensure optimal oral health for all individuals (American Dental Association, 2013). However, though mostly preventable, oral diseases still cause pain and disability for many Americans (HHS, 2000).

Over the past two decades, many organizations, agencies, and legislators have been brainstorming ideas as to how our nation can address the oral health care crisis. Many proposed solutions involve increasing access through non-traditional methods and settings for delivering oral health care. As the roles of

dental hygienists are expanding throughout the country, effectively expanding the use of dental hygienists may ameliorate the projected dentist shortages. Increasing the use of dental hygienists to expand the delivery of affordable preventive oral health services in convenient, non-traditional dental settings, without the presence of a dentist, may play an important role in creating obtainable access to dental care. This concept is referred to as “direct access”.

Problem Statement

Minnesota Statute 150A.10 subd. 1a “Limited Authorization for Dental Hygienists”, commonly referred to as “collaborative agreement/practice”, is Minnesota’s version of direct access. According to a survey conducted by the Minnesota Department of Health in 2010, the exact number of dental hygienists providing direct access care is unknown, since registering a collaborative agreement with the Minnesota Board of Dentistry is voluntary. Despite this, it is estimated that only 2.5 % of the state’s dental hygiene workforce is practicing in a collaborative agreement (Minnesota Oral Health Program [MOHP], 2011). Unfortunately, a large majority of collaborative practice dental hygienists are practicing in a collaborative agreement for reasons other than the original intent of the statute, which is to increase oral health care access to underserved populations. Many survey respondents mentioned the use of a collaborative agreement merely for the purpose of exposing x-rays on new patients prior to examination by a dentist (MOHP, 2011) and not for the purpose of increasing access to underserved populations. Additionally, 20% of survey respondents

were not even sure if they were participating in a collaborative agreement or not (MOHP, 2011). The results of this assessment indicated that though Minnesota has made great strides in developing a direct access model, there is need for improvement to increase awareness and participation.

Need for the Study

Throughout the country, dental hygienists are making a positive impact on the oral health of underserved populations. “The ability of dental hygienists to initiate treatment based on their assessment of patients’ needs without the specific authorization of a dentist, treat the patients without the presence of a dentist, and maintain a provider-patient relationship” (ADHA, 2015h, p. 36), known as direct access, is increasing access to preventive dental care for many Americans. Though Minnesota developed a “direct access” model in 2001 (Minnesota Statute 150A.10 subd. 1a “Limited Authorization for Dental Hygienists”; Collaborative Agreement/Practice) it has not had the success that other states have achieved in increasing access to preventive dental hygiene services for unserved and underserved populations.

A call for action needs to be taken to adopt and expand on the collaborative dental hygiene practice model in Minnesota, as a potential solution for the state’s oral healthcare needs. The continued unmet demand for access to dental care, the foreseeable shortcomings in the number of state dentists, and the indications of an underutilized supply of dental hygienists, all support the need to strengthen the state’s current direct access statute (150A.10 subd. 1a).

Purpose

The Health Resources and Services Administration (HRSA) of the United States Department of Health and Human Services (HHS) is the primary Federal agency for improving access to health care services for people who are uninsured, isolated or medically vulnerable (HHS, 2015a). The 2015 HRSA budget targeted critical healthcare needs in underserved areas. Normandale Community College's dental hygiene program, in partnership with Metropolitan State University, was the recipient of a 1.6 million dollar grant (under grant number D85HP28494) ("Normandale Receives HRSA Grant", 2015). "The grant focuses on new workforce models to prepare dental hygienists for the charge of expanding scope with new competencies to meet the oral health care needs of the vulnerable, underserved, and rural populations" ("Normandale Receives HRSA Grant", 2015, para.1). One focus area of this grant is to strengthen the collaborative practice infrastructure in Minnesota.

The purpose of this research study is to identify the strengths and limitations of the current Minnesota collaborative agreement (Statute 150A.10 subd. 1a "Limited Authorization for Dental Hygienists") in addressing the oral health needs of unserved and underserved Minnesotans. Through the identification of needs and gaps in the collaborative agreement infrastructure, this research can inform and provide suggested guidelines for quality measures and policy recommendations. The findings of this study will be shared with

HRSA grant #D85HP28494, to aid in meeting Goal One: Strengthen the Collaborative Practice Infrastructure.

This study is significant because the findings not only will assist in achieving the purpose of this grant, but will give dental professionals, dental educators, policymakers, and other healthcare providers an insight into the strengths and weaknesses of Minnesota's direct access model. Additionally, the findings may assist with recommending revisions to the Minnesota Statute 150A.10 subd. 1a "Limited Authorization for Dental Hygienists", to increase access to preventive dental hygiene services, thus decreasing the amount and extent of oral disease in the state.

Research Questions

1. What are the strengths of the current Minnesota Collaborative Agreement (Statute 150A.10 subd. 1a "Limited Authorization for Dental Hygienists"), in addressing the oral health needs of unserved and underserved Minnesotans?
2. What are the limitations of the current Minnesota Collaborative Agreement (Statute 150A.10 subd. 1a "Limited Authorization for Dental Hygienists"), in addressing the oral health needs of unserved and underserved Minnesotans?
3. What changes need to be made to the current Minnesota Collaborative Agreement (Statute 150A.10 subd. 1a "Limited Authorization for Dental

Hygienists”), to better address the oral health needs of unserved and underserved Minnesotans?

4. What other approaches might assist in increasing direct access care provided by Minnesota dental hygienists?

Limitations

1. Demographic data was limited to the professional and educational background of the participants, in an attempt to keep participants anonymous. Data was compared across sample groups; committee members in comparison to the Collaborative Practice Dental Hygienists (CPDH).
2. All participants were female, as there were no male committee members and presumably no males in CDHP, primarily due to practice in a profession that is still predominately female.
3. Despite the high participation rate, a limitation may be the overall number of participants, specifically in terms of CPDHs. The limitation with this group is that all perspectives may not have been captured, such as the perspectives of CPDHs who may work in different settings, treat different populations, and reside in different locations across the state, in comparison to the CPDHs interviewed in this study.
4. The perspectives of mainly dental hygienists were presented in this research study. If time would have allowed, an important perspective

to include would have been that of Minnesota dentists, both male and female; although one dentist was included in this study.

5. Generalizability is limited by the research design of a small, qualitative study. As well, there was very limited existing research on Collaborative Dental Hygiene Practice in Minnesota for comparison.
6. Timelines required to fulfill graduate studies thesis completion may have limited data collection and analyses.

Delimitations

1. The number of interviews conducted were ultimately determined by the aforementioned timeline.
2. The interview technique utilized, in-person or by phone, was based upon convenience for participants.
3. Participants were purposively selected and may not encompass all perspectives.

Assumptions

1. It was assumed that all participants answered interview questions honestly.
2. It was assumed that the interview technique utilized, in-person or by phone, did not affect the honesty of responses.
3. It was assumed that participants would be familiar with the current collaborative agreement.

Definition of Terms

The following terms were defined for this study.

Collaborative Agreement/Practice. “An agreement that authorizes the *dental hygienist* to establish a cooperative working relationship with other health care providers in the provision of patient care” (ADHA, 2015b, p. 34). See *“Limited Authorization for Dental Hygienists”*.

Collaborative Dental Hygiene Practice Advisory Committee. “The inaugural collaborative dental hygiene practice advisory committee formed in 2010. The committee’s primary charge then, and now after reactivation, is to understand reasons why the collaborative dental hygiene practice model continues to be underutilized nearly 15 years after passage of the law. Through the work of the committee, recommendations for statutory and educational changes to strengthen the ability of dental hygienists to provide dental hygiene care to meet the needs of the underserved will be explored. This committee membership includes representatives from the following stakeholder groups: Minnesota Dental Hygienists’ Association, Minnesota Dental Association, Minnesota Department of Health, Department of Health Services, Delta Dental of Minnesota Foundation, dental hygiene educational programs, safety net clinics, non-profit dental clinics, and practicing dental hygienists” (Colleen Brickle, personal communication, November 21, 2015).

Dental Hygiene. “The science and practice of recognition, prevention, and treatment of oral diseases and conditions as an integral component of total

health. This includes assessment, diagnosis, planning, implementation, evaluation and documentation. Dental hygiene is the profession of dental hygienists” (ADHA, 2015h, p. 35).

Dental Hygienist. “A primary care oral health professional who has graduated from an accredited dental hygiene program in an institution of higher education, licensed in dental hygiene to provide education, assessment, research, administrative, diagnostic, preventive and therapeutic services that support overall health through the promotion of optimal oral health” (ADHA, 2015h, p. 36).

Direct Access. “The ability of dental hygienists to initiate treatment based on their assessment of patients’ needs without the specific authorization of a dentist, treat patients without the presence of a dentist, and maintain a provider-patient relationship” (ADHA, 2015h, p. 36).

Direct Supervision. The dentist must be physically present when the dental hygienist is providing patient care (ADHA, 2015d).

General Supervision. The dentist must authorize the dental hygiene procedures performed, however does not need to be physically present (ADHA, 2015d).

Limited Authorization for Dental Hygienists. This statute (MS 150A.10 subd. 1a), commonly referred to as “collaborative dental hygiene practice” or “collaborative agreement”, authorizes dental hygienists who enter into a written

collaborative agreement with a dentist, to provide the following services in settings other than the traditional dental office:

1. oral health promotion and disease prevention education;
2. removal of deposits and stains from the surfaces of the teeth;
3. application of topical preventive or prophylactic agents, including fluoride varnishes and pit and fissure sealants;
4. polishing and smoothing restorations;
5. removal of marginal overhangs;
6. performance of preliminary charting;
7. taking of radiographs;
8. performance of scaling and root planing; and
9. administration of local anesthetic agents or nitrous oxide inhalation analgesia as specifically delegated in the collaborative agreement with a licensed dentist (Allied Health Personnel, 2015, p. 1).

Chapter Two: Literature Review

Introduction

The purpose of this research study was to identify the strengths and limitations of the current Minnesota collaborative agreement (Statute 150A.10 subd. 1a “Limited Authorization for Dental Hygienists”) in addressing the oral health needs of unserved and underserved Minnesotans. Through the identification of needs and gaps in the collaborative agreement infrastructure, this research can inform and provide suggested guidelines for quality measures and policy recommendations. This chapter reviews related literature including the oral health care crisis, an overview of direct access (advancing dental hygiene education, dental hygiene diagnosis, direct reimbursement, self-regulation, and teledentistry), innovative state models of direct access (California, Colorado, and Iowa), and the Minnesota Collaborative Agreement .

Oral Health Care Crisis

Dental caries has been identified as “the single most chronic childhood disease” (HHS, 2000, p. 4). It was found nationally that 60 percent of school-aged children have had caries (HHS, 2000) and about 1 in 4 children have untreated caries (Kaiser Commission on Medicaid and the Uninsured, 2012). These findings make dental caries five times more common than asthma among this age group (HHS, 2000), making caries the most common chronic illness in

children (Kaiser Commission on Medicaid and the Uninsured, 2012). Children from lower-income families and certain racial and ethnic groups are at an increased risk of having untreated caries, in comparison to their more affluent and white peers (CDC, 2011). In Minnesota, to assess the oral health status of its children, the Minnesota Department of Health conducted the state's first baseline "open mouth" Basic Screening Survey in 2010 (Minnesota Department of Health [MDH], 2013). This survey was conducted on 3rd grade students throughout 40 randomly selected public schools, with a total of 1,766 students observed (MDH, 2011). The screenings found that 55% had experienced caries (national average of 52 %); 18% had untreated caries (national rate of 29%); and 64% had at least one sealant on a permanent molar (national rate of 23%) (MDH, 2011).

Adults, especially older adults, aged 65 years and older, experience oral disease (Oral Health America, 2013b). Nationally, 1 in 4 adults has untreated tooth decay (Kaiser Commission on Medicaid and the Uninsured, 2012) and 1 in 4 older adults have lost all of their teeth (CDC, 2011). The rate of untreated tooth decay among low income adults is twice that of adults with more income (41% in comparison to 19%) (Kaiser Commission on Medicaid and the Uninsured, 2012). In the United States, 1 in 8 adults are aged 65 years and older, which represents 40.3 million Americans (U.S Census Bureau, 2010). Approximately 1.5 million older adults live in long-term care facilities (U.S Census Bureau, 2010) and it is predicted that this number will double between 2000-2050 (Houser, Fox-Grage, & Ujvari, 2012). With 10,000 American adults retiring per day and only 2% of

them retaining their dental benefits, it should come as no surprise that only 35% of lower-income older adults have seen a dental provider in the past four years (Oral Health America, 2013a).

Periodontal diseases are also highly prevalent among adults in the United States. Eke and colleagues (2015) indicated that approximately 46 percent of adults (64.7 million) have periodontitis; an irreversible, bacterial infection that damages the supporting structures of the teeth and can have systemic health consequences. The existence of periodontitis was positively associated with increasing age and the male gender, as well, there was an increased prevalence in Hispanics (63.5%), non-Hispanic blacks (59.1%), and non-Hispanic Asian Americans (50.0%), in comparison to non-Hispanic whites (40.8%) (Eke et al., 2015). Untreated periodontitis has been linked to a number of health issues, such as an increased risk of high blood pressure, heart attack, stroke, pregnancy related complications, hospital acquired pneumonia, and uncontrolled diabetes (Gehrig & Willmann, 2016). Continued research is suggesting even more relationships between untreated periodontal diseases and systemic diseases and complications.

Oral diseases can have significant impacts on quality of life. Untreated oral diseases can lead to debilitating pain, absenteeism from school or work, difficulty eating, delayed growth and social development, and loss of teeth (IOM & NRC, 2011). It is projected that dental problems account for missing 1.6 million school days nationally and that children from low income families are

nearly 12 times more likely to have restricted-activity days such as this (MDH, 2013). As well, nationally, 164 million hours of work a year are lost to dental problems (Kaiser Commission on Medicaid and the Uninsured, 2012), with lower income adults missing work 2 to 4 times more often than higher paid workers (MDH, 2013).

If an infection results and is not adequately treated, oral diseases, in rare cases, can even lead to death. In 2007, 12 year old Deamonte Driver died from an untreated tooth infection that spread to his brain (Gavett, 2012). At the time of his death, his family did not have dental coverage, however they were repeatedly attempting to find a dentist who would accept Medicaid (Gavett, 2012). Five years later, 24 year old Kyle Willis died from an untreated tooth infection, when he was not able to afford the recommended antibiotics he needed (Gavett, 2012). Willis also lacked dental coverage, so instead utilized an emergency room for care. Both of these deaths were preventable and important reminders of the potential serious consequences that may result from lack of access to oral health care.

Access issues have forced many uninsured Americans to seek dental care in hospital emergency rooms. In 2009, the Pew Center on the States (2012) estimated that 830,590 visits were made to emergency rooms for preventable dental conditions, which was a 16% increase from 2006. Nalliah, Allareddy, Elangovan, Karimbux, and Allareddy (2010), conducted a study investigating the cost of utilizing emergency rooms for emergency dental care and found that

treating about 330,000 cases costs nearly \$110 million. In 2008-2010, the cost of utilizing Minnesota emergency departments for non-traumatic dental emergencies costed nearly \$148 million (MDH, 2013). Utilizing hospitals in this manner is very costly to hospitals, taxpayers, and the state (Pew Center on the States, 2012). Perhaps these numbers would not be so high if Americans had access to the basic preventive oral health care they need.

In 2012, nearly 8 in 10 Minnesota adults aged 18 years and older (75%) reported visiting a dentist in the past year, which is higher than the national average of 67%. Although Minnesota adult statistics are higher than the national adult average use of dental services in the past year, disparities by income, education, and race and ethnicity exist. Minnesota adults with incomes less than \$15,000 were less likely to have visited a dental clinic in the past year compared to those making \$50,000 or more (57% in comparison to 85%). Likewise, Minnesota adults with less than a high school diploma were less likely to have visited a dental clinic in the past year compared to those with a college education (57% compared to 85%). As well, Minnesota adults of color and/or Hispanic/Latino descent, were less likely to have visited a dental clinic in the past year compared to white adults (57%/65% compared to 77%) (MDH, 2012a).

In 2011-2012, nearly 8 in 10 Minnesota children aged 0-17 years (76%) had at least one preventive dental visit in the past year, which is slightly lower than the national average (77%). Use of preventive services by children increased with higher levels of income, education among parents, and dental insurance

coverage. Minnesota children from households who lived below 100% of the federal poverty level had lower dental service use (61%) compared to children who lived in households at or above 400% of the federal poverty level (85%). Children's dental service use was higher in Minnesota households where parents had more than a high school education (79%) compared to less than a high school diploma (61%). In addition, Minnesota children's dental service use was twice as high among households with insurance compared to uninsured families (33%), with the highest use among those with private insurance (81%) (MDH, 2012b).

In 2012, roughly 862,000 Minnesotans received health care coverage through the state's publicly funded basic health care programs: Medical Assistance (Medicaid) and MinnesotaCare (Minnesota Department of Human Services [DHS], 2014b). During 2012, less than half of these programs' recipients had a dental visit paid for through Minnesota Health Care Programs (MHCP) (MDH, 2012c). Lack of dental services covered by MHCP, difficulty finding dental providers who will accept MHCP due to low reimbursement rates and high administrative burdens, long waits to receiving dental care, and low health literacy may all play a role in the deficiency of use (MDH, 2013). Throughout the country, it is projected that only 20% of dentists provide care to individuals with Medicaid, and those who do have unreasonably long wait times (Sanders, 2012). In addition, Medicare, the largest health insurance provider for adults aged 65 years and older, does not offer dental benefits (Oral Health America, 2013b).

Another contributing factor to the oral health care crisis in our country is a shortage of dentists. There are a disproportional number of dental providers to meet the needs of underserved populations requiring dental care. Currently, there are approximately 190,000 dentists (HHS, 2015b) and 185,000 dental hygienists (American Dental Hygienists' Association [ADHA], 2015g) practicing in the United States. At a national level, it is projected that the number of practicing dentists will only grow by 6% from 2012-2025 (HHS, 2015b). In contrast, dental hygiene is anticipated to be one of the fastest growing professions in the country, with a projected growth of 28% in the same time period (HHS, 2015b). It is predicted that the increase in supply of dentists will not meet the increase in demand for dentists, which will intensify the current dental shortage (HHS, 2015b). On the other hand, the supply of dental hygienists will exceed the demand for dental hygienists (HHS, 2015b).

In 2008, there were 60.2 Minnesota dentists per a 100,000 population, which is only slightly above the national average of 59.4 (MDH, 2009). For Minnesota dental hygienists, there were 68 hygienists per 100,000 population, which is significantly higher than the national rate of 54 (MDH, 2008). Furthermore, the Minnesota Department of Employment and Economic Development, foresees an 11.5 % growth in Minnesota dental hygienists by 2022, in comparison to only a 4% increase in Minnesota dentists (Minnesota Department of Employment and Economic Development, 2015). According to the Minnesota Department of Health, in 2012 there were 4,062 licensed dentists

and 5,413 licensed dental hygienists (MDH, 2012d). Of these numbers, nearly half of the Minnesota dentists (2,014) are 55 years or older, in comparison to less than a third of the Minnesota dental hygienists (1,552) (MDH, 2012d). As Minnesota dentists start to retire, there may not be enough dental school graduates to replace them.

Approximately 47 million Americans live in areas with shortages of dentists (Pew Center on the States, 2012). The Health Resources and Services Administration Bureau of Health Workforce designates specific areas that are experiencing shortages of dentists as Dental Health Professional Shortage Areas (Dental HPSAs) (HHS, n.d.). Dental HPSA designations may be geographic (a county or service area), demographic (low-income population), or institutional (comprehensive health center, federally qualified health center, or other public facility) (HHS, n.d.). As of 2014, there are 124 Dental HPSAs throughout 59 Minnesota counties (MDH). A majority of the Dental HPSAs in Minnesota are low income designations, where there are high numbers of individuals residing who are living at or below 200% of the federal poverty guidelines (MDH, 2014). As well, there is great need in Greater (rural) Minnesota, where there are currently three counties that have no dentist and several that have ratios of one dentist per 10,000 residents (MDH, 2014). The Minnesota Department of Health reports that only 26% of dentists were practicing in rural areas in 2010, with a majority reaching retirement in the near future (MDH, 2013). The Henry J. Kaiser Family Foundation reports that Minnesota is currently only meeting the

need of 48% of its population and that an additional 93 dentists are needed to remove the Dental HPSA designation. Nationally, it would take an additional 7,200 dentists to remove the current dental HPSA designation (Kaiser Family Foundation, 2014). However, these dentists need to be willing to serve the areas and populations of need.

Direct Access Overview

Direct access allows dental hygienists to “initiate treatment based on their assessment of the patient’s needs without the specific authorization of a dentist, treat the patient without the presence of a dentist, and maintain a provider-patient relationship” (ADHA, 2015h, p. 36). There are currently 38 states that have policies allowing dental hygienists to provide various levels of direct access services (ADHA, 2016). The scope of practice of dental hygienists varies greatly throughout the country and is individually established by state laws and state regulatory boards. Scope of practice includes procedures that dental hygienists can perform, supervision levels, and locations in which services may be provided (National Governors Association, 2014).

In direct access states, it is common for some or all of preventive dental hygiene services to be allowed, such as screening/assessment, oral hygiene instructions, prophylaxis, fluoride application, and placement of sealants. Some states allow a more diverse assortment of dental hygiene procedures including, but not limited to, radiographs, scaling and root planing, periodontal maintenance, administration of local anesthesia and/or nitrous oxide, polishing

restorations, removal of overhanging restorations, and referral to a dentist. In addition, direct access in some states allow dental hygienists to practice expanded functions such as dental hygiene diagnosis, interim therapeutic restorations (also known as atraumatic restorative technique), extraction of mobile teeth, and prescribing fluorides and antimicrobials. California, for example, allows a Registered Dental Hygienist in Alternative Practice to perform any of the California dental hygiene duties allowed under general supervision (Mertz, 2008).

Current supervision requirements also vary widely from state to state. Three common levels of supervision are direct supervision, general supervision, and direct access. Direct supervision requires that the dentist must be physically present when the dental hygienist is providing patient care. In general supervision, the dentist must authorize the procedures being performed, however does not need to be physically present. With direct access, the dentist does not need to initiate treatment prior to or be physically present for the dental hygienist to provide services that he or she determines appropriate (ADHA, 2015d). A dental hygienist providing direct access care typically is required to demonstrate specific levels of experience and/or complete additional educational requirements. Additionally, states may have other requirements such as liability insurance, practice/collaborative agreements with a dentist, specific referral sources, data reporting, and continuing education. On the other hand, some

states such as Colorado, require no additional requirements to provide direct access services (ADHA, 2015f).

Settings for providing services to unserved or underserved populations are determined by each direct access state. Some states only allow direct access dental hygienists to provide services in a small number of setting types, whereas other states provide lengthy and detailed listings of the exact settings where care can be provided. A few states, such as Colorado and Maine, allow “independent dental hygienists” to provide care in any setting, including dental hygiene practices. Some of the common direct access settings include long-term care facilities, hospitals, schools, head start programs, community health centers, migrant work facilities, state and county correctional institutions, group homes, residences of home bound patients, senior centers, and Indian health centers (ADHA, 2015f).

Upon reviewing the literature revolving around direct access dental hygiene care and exploring the 38 states that allow various levels of direct access services, five additional concepts emerged that deserve further exploration. These concepts include advancing dental hygiene education, dental hygiene diagnosis, direct reimbursement, self-regulation, and teledentistry. The following subheading will discuss these concepts and their relation to direct access care. Furthermore, three innovative state models of direct access (California, Colorado and Iowa) will be introduced in this chapter, in which these concepts are presented in action.

Advancing Dental Hygiene Education. The vision of the American Dental Hygiene Association (ADHA) is to “integrate dental hygienists into the health care delivery system as essential primary care providers to expand access to oral health care” (ADHA, 2015h, p. 3), for which advancing dental hygiene education is vital. It is suggested that the current dental hygiene curriculum must change in order to prepare dental hygienists with the skills needed to address the oral health needs of diverse populations and improve access to care (ADHA, 2015j).

Training in the area of interprofessional education will be essential and is defined as “members or students of two or more professions associated with health or social care, engaged in learning with, from and about each other” (Fried, 2013, para. 2). The ADHA also recommends that new domains and competencies be developed in areas of diversity, linguistic and cultural competence, health care policy, health informatics and technology, health promotion and disease prevention, leadership, program development and administration, business management, and integration of oral health services into healthcare systems. The concern with transforming dental hygiene education is that traditional associate degree programs lack the curricular time needed to implement changes to the curriculum that will enhance the profession (ADHA, 2015j).

Dental hygiene educational programs are categorized as entry-level (including both associate and baccalaureate degrees), degree completion

(programs allowing a dental hygienist with an associate degree to obtain a baccalaureate degree), and master's degree (Battrell et al., 2014). To date, there has not been a doctorate degree specific to dental hygiene, however Idaho State University, approval pending, may be the first institution to offer a doctorate degree in dental hygiene (ADHA, 2015j).

In the United States, there are a total of 335 entry-level dental hygiene programs, with the vast majority, 288 programs, awarding associate degrees (ADHA, 2015j). The typical entry-level dental hygiene program is 84 credits and can be completed in approximately three years (ADHA, 2014a). Annually, there are about 6,700 dental hygienists graduating from entry-level programs (ADHA, 2014a). There are a total of 55 degree completion programs (Battrell, 2014) and 21 master's programs throughout the country (ADHA, 2015j).

The ADHA and the American Dental Educators' Association have been encouraging associate degree programs to form articulation agreements and utilize distance learning technology to enhance and ease the progression to a baccalaureate degree. Much progress has been made in this area as 100 entry-level programs have already implemented this model (ADHA, 2015j). One example of an innovative model is the "dual enrollment" articulation between Metropolitan State University and Normandale Community College in Minnesota. Students can simultaneously enroll in both schools and work on completing their baccalaureate degree online, while actively participating in the traditional associate degree program. Upon graduating from the associate

program, the student can complete the baccalaureate degree in as little as one to two semesters (“Frequently Asked Questions”, 2013).

Since 1986, the ADHA’s intention for the dental hygiene profession was to require a baccalaureate degree for entry into the profession (Battrell et al., 2014). With the roles of dental hygienists expanding to meet the needs of a diverse population and to address the access to care crisis, examples from other health care disciplines can help ensure the profession of dental hygiene is prepared for the future. Advancement of educational requirement models for entry into practice in physical therapy, occupational therapy, physicians’ assisting, pharmacy, and nursing have shown to be promising and influential on the path dental hygiene education is attempting to take (Boyleston & Collins, 2012).

Dental Hygiene Diagnosis. “Dental hygiene diagnosis is the identification of an individual’s health behaviors, attitudes and oral health care needs for which dental hygienists are educationally qualified and licensed to provide. It also requires evidence-based critical analysis and interpretation of assessments in order to reach conclusions about the patient’s dental hygiene treatment needs. The dental hygiene diagnosis provides the basis for the dental hygiene care plan” (ADHA, 2015h, p. 35). Despite the importance of dental hygiene diagnosis to the dental hygiene process of care (assessment, dental hygiene diagnosis, planning, implementation, evaluation and documentation), the term was removed from the Accreditation Standards for Dental Hygiene Education Programs in 2008 (ADHA, 2015h).

Currently, only two states have acknowledged the importance of dental hygiene diagnosis; Oregon and Colorado. The Oregon Board of Dentistry rule 818-035-0020, “Authorization to Practice,” permits dental hygienists to “diagnose, treatment plan and provide dental hygiene services”. Colorado state statute, Sec. 12-35-128, states that, “A dental hygienist may perform dental hygiene assessment, dental hygiene diagnosis, and dental hygiene treatment planning for dental hygiene services” (ADHA, 2015b, p. 1). Dental hygiene diagnosis has the potential to enable dental hygienists to efficiently and effectively treat underserved individuals through direct access, with the ability to make referrals when deemed necessary.

Direct Reimbursement. Reimbursement policies create significant barriers to providing direct access care throughout the country. The ADHA advocates that dental hygienists be recognized for direct reimbursement for services rendered (ADHA, 2015e). According to the ADHA, as of 2015, 17 state’s practice acts contain statutory or regulatory language allowing the state Medicaid departments to directly reimburse dental hygienists for services rendered (ADHA, 2015i). Minnesota is included on the ADHA’s list of states in which dental hygienists can be reimbursed by Medicaid, however upon review of the Minnesota Department of Human Services website, dental hygienists are not listed as eligible providers under the “Critical Access Dental Payment Program” (DHS, 2014a).

Allowable reimbursement codes and rates are set forth by each state's Medicaid program. Though more state Medicaid programs are recognizing dental hygienists as eligible providers, third party payers (dental insurance companies) may or may not recognize dental hygienists as providers who are directly reimbursable. Currently, there are limited laws regulating who third party payers must pay (ADHA, 2015e).

Self-Regulation. The National Governors Association recommends that states “examine the role that dental hygienists can play in increasing access to care by allowing them to practice to the full extent of their education and training” (National Governors Association, 2014, p. 1). One potential way to ensure this is through self-regulation, which enables professions to effect change in their scopes of practice to reflect their natural evolution (Dower, Moore, & Langelier, 2013). Previously mentioned health care providers such as occupational therapists, physical therapists, nurses, physicians' assistants, and pharmacists all mandated higher levels of education in their professions, which transpired due in part to self-regulation (ADHA, 2015j). These changes have enhanced and broadened the services that these health care professionals can provide. There are currently 18 states that have dental hygiene advisory committees or varying degrees of self-regulation for dental hygienists; Minnesota is not one of them (ADHA, 2015i).

Teledentistry. Teledentistry, also referred to as telehealth, can be used to increase access to care and enhance the delivery of services, especially in

remote areas where a dental hygienist may be the only oral health care provider in the community. Teledentistry is “the use of information and telecommunication for oral care, consultation, education, and public awareness” (Daniel & Kumar, 2014, p. 202). Digital radiographs, intraoral photos, and electronic health records can be easily shared between providers for consultation. This is just one approach to enhancing direct access care.

Innovative State Models of Direct Access

In response to the oral health care crisis in America, innovative state models of direct access are forming to extend the reach of the oral health care delivery system and improve oral health access. Though there are 38 direct access states throughout the country, the direct access models found in California, Colorado, and Iowa are being explored due to their innovative use of dental hygienists. Each of these states display unique entry requirements, provider services, practice regulations, and creative state programs/models to ensure access to preventive oral health care. Furthermore, the previously mentioned concepts of advancing dental hygiene education, dental hygiene diagnosis, direct reimbursement, self-regulation, and teledentistry are included.

California. In 1998, California officially recognized a new dental provider: the Registered Dental Hygienist in Alternative Practice (RDHAP) (Mertz, 2008). In order to practice as a RDHAP, a dental hygienist needs to be licensed through the state of California, possess a baccalaureate degree, and have

a minimum of 2,000 hours of clinical experience in the preceding 36 months (ADHA, 2015f). In addition, the individual must complete a 150 hour board approved continuing education course for RDHAP, as well as successfully pass a state licensure examination (Mertz & Glassman, 2011).

A RDHAP can practice independently in underserved settings, such as Dental Health Professional Shortage Areas, residences of the homebound, schools, nursing homes, hospitals, residential care facilities, and other public health settings (Mertz & Glassman, 2011). The RDHAP may work as an employee of a dentist, another RDHAP, or a facility. As well, RDHAP can work as independent contractors or as sole proprietors of an alternative dental hygiene practice (ADHA, 2015f).

RDHAPs can practice unsupervised, but must have a documented “dentist of record” for the purpose of referral, consultation, and emergency services (Mertz & Glassman, 2011). The RDHAP can initiate dental hygiene services to patients for 18 months without the authorization of a dentist (ADHA, 2015f). However, after an 18 month period, the patient must get a prescription from a dentist or a physician, verifying that the patient has been examined. That prescription then will last 2 years (Mertz & Glassman, 2011).

The RDHAP can provide all services that California Registered Dental Hygienists can provide under general supervision (Mertz & Glassman, 2011). In addition to the typical preventative and therapeutic services that dental

hygienists provide, the RDHAP can place interim therapeutic restorations (ITR). An ITR is a temporary filling that arrests the caries process until the patient is able to visit a dentist. After a dentist determines the need for ITR, the RDHAP may excavate the cavity using hand instruments and place a glass ionomer restoration, under general supervision. This is a valuable adjunctive service for populations that are difficult to reach or have inaccessibility to dentists (Glassman, Subar, & Budenz, 2013).

California is unique in that it has a self-regulating dental hygiene committee, known as the Dental Hygiene Committee of California. The committee consists of four dental hygienists, four public members, and one dentist; all of whom are appointed by the governor. The committee is responsible for issuing, reviewing, and revoking licenses, developing and administering examinations, adopting regulations, as well as determining fees and continuing educational requirements for all dental hygiene licensure categories (ADHA, 2015c). Another interesting characteristic of RDHAP is that these providers can bill California Medicaid (Denti-Cal) directly, as well as other dental insurance plans, such as Delta Dental (ADHA, 2015i).

One innovative California model to address the profound health disparities among underserved populations is the “virtual dental home”. This model was developed by the Pacific Center for Special Care at the University of the Pacific Author A. Dugoni School of Dentistry. The idea behind this dental care model is to “bring care to places where underserved people live, work, or

receive social, educational, or general health services” (Glassman, 2012, p. 565). The virtual dental home model uses new methods of delivering oral health services by utilizing nontraditional settings, expanded roles for existing dental providers, and incorporating teledentistry (Glassman, Harrington, Namakian, & Subar, 2012).

With the virtual home model, RDHAPs utilize technology to collaborate with a dentist who is at another geographic location. The RDHAP collects dental health records such as radiographs, intraoral photos, charts of dental findings, and dental and medical histories. All of this information can be uploaded into a cloud-based, digital information system, where the collaborating dentist can review the records. Once the records are reviewed by the dentist and a treatment plan is put forth, the RDHAP can carry out the plan, including ITR, under general supervision of the dentist. If the plan includes services outside the RDHAPs scope of practice, they can be referred to one of the partnering dentists (Glassman, Harrington, Namakian, & Subar, 2012).

Colorado. Colorado has one of the oldest models of direct access, with legislation for the “Unsupervised Practice” Dental Hygienist dating back to 1987. Colorado is unique in that it is the only state that a dental hygienist may own a dental hygiene practice, with absolutely no requirements or limitations on the settings or populations served. Unsupervised Practice Dental Hygienists can perform the entire Colorado dental hygiene scope of practice without the authorization or supervision of a dentist, except for local anesthesia, which

requires general supervision (ADHA, 2015f). As of July 2015, Colorado dental hygienists can apply for a permit to place ITRs (ADHA, 2015a).

Similar to California, Unsupervised Practice Dental Hygienists can bill Medicaid directly. However, the depth of billing is limited to preventative services on children only (ADHA, 2015i). Despite the limitations for billing Medicaid, Colorado is one of only two states that have antidiscrimination provisions when establishing insurance exchanges. Colorado has a specific provision in the insurance code that requires third party payers to pay dental hygienists on the same basis they would a dentist for services covered under their policies. Colorado dental hygienists have also had success with billing third party payers, such as Delta Dental (ADHA, 2015e).

As previously mentioned, Colorado is one of only two states in the country that permit dental hygiene diagnosis as part of the dental hygienists' scope of practice. Under the Colorado state statute, dental hygiene diagnosis means the "identification of an existing oral health problem that dental hygienists are qualified and licensed to treat within the scope of dental hygiene practice" (ADHA, 2015b, para. 3).

An innovative collaboration model involving Unsupervised Practice Dental Hygienists was created by Dr. Patricia Braun, a Denver pediatrician. In providing care to underserved Colorado children, she noted that "the most common disease in that stack of kids is caries, and I'm tired of it", Braun said (ADHA, 2014b, para.

2). She then began a program that co-located Unsupervised Practice Dental Hygienists into medical pediatric practices, with the goal of preventing early childhood caries (ADHA, 2014b).

Five Colorado dental hygienists were co-located into five medical practices that served low-income children. The evaluation period of the program lasted 27 months, and in that time period 2,071 children were provided direct preventative oral health services, as well as a referral to a dentist when deemed necessary. The program provided a familiar and convenient setting for the child and caregiver. Five years after the initiation of the program, four of the five dental hygienists are still co-located within the medical practices (Braun et al., 2013). This model is a great example of the benefits of direct access care and interprofessional practice.

Iowa. Iowa has a similar model to Minnesota in the sense that a written agreement must be made between the Public Health Dental Hygienist and a dentist. In order to qualify as a Public Health Dental Hygienist, the hygienist must have three years of clinical experience. All services in the dental hygiene scope of practice (except local anesthesia and nitrous) may be provided in schools, Head Start settings, nursing facilities, federally-qualified health centers, public health vans, free clinics, community centers, and public health programs. Services may be provided once to each patient, with the supervising dentist specifying the period of time in which an examination by a dentist must occur prior to the dental hygienist rendering further services. An additional requirement is that Public Health Dental Hygienist must submit an annual report

to the state department, noting the number of patients treated and the services rendered (ADHA, 2015f).

Similar to California, Iowa dental hygienists participate in self-regulation. Iowa's dental hygiene committee of the board includes two dental hygienists and one dentist. The committee has the power to make all rules pertaining to dental hygiene in the state of Iowa, and the Iowa board of dentistry is required to adopt and enforce those rules (ADHA, 2015c).

Iowa developed a unique program to assist Iowa's children to connect with dental services; I-Smile Dental Home. This statewide program utilizes interprofessional practice and coordination, to increase access to dental care for low income children. The dental home team includes dental hygienists, physicians, nurse practitioners, registered nurses, physicians' assistants, and dietitians who provide oral screenings, education, preventive services, and guidance. Dentists then provide definitive evaluation and treatment (Iowa Department of Public Health, 2015).

In an effort to improve the dental support system for these families, 24 licensed dental hygienists were appointed the role of I-Smile Coordinators throughout the state. In addition to serving as a main point of contact for these families, these dental hygienists work with public health agencies, health care providers, school districts, and dental offices, to ensure all at-risk children have a dental home (Iowa Department of Public Health, 2015). These dental hygienists

also work to develop partnerships, create a dental referral network, provide training to other health care providers, ensure that preventive dental services are provided in public health settings, and assist at-risk families in finding a dental home (Iowa Department of Public Health, 2014).

The I-Smile Dental Home Initiative continues to maintain a positive impact on the number of low-income children who receive dental services. In 2014, there were over 113,400 Medicaid-enrolled children, 12 years and under, who were seen by a dentist. This was a 59 percent increase since 2005. In addition, nearly four times as many Medicaid-enrolled children aged 0-5 years received a preventative dental service in a public health setting, in comparison to 2005. More Iowa dentists are also billing Medicaid, with twice as many providers billing for more than \$10,000 in 2014, than in 2005. Lastly, the average cost per Medicaid-enrolled child is decreasing, particularly for children aged 10-12 years, with a 27% decrease between 2005-2014 (Iowa Department of Public Health, 2014).

Collaborative Dental Hygiene Practice in Minnesota

In 1999, the Minnesota Department of Human Services recommended that the state develop its own direct access provision, to improve access to preventive dental services in Minnesota. Shortly following, in 2001, the Minnesota Statute 150A.10, subd. 1a “Limited Authorization for Dental Hygienists” was enacted (MOHP, 2011). The law allows licensed dental

hygienists to be employed by a health care facility, program, or nonprofit organization to perform certain dental hygiene services. These services can be provided without the presence, or prior examination, of a dentist, as long as the dental hygienist enters into a collaborative agreement with a dentist, who accepts responsibility for the services provided (Allied Dental Personnel, 2015).

A Minnesota dental hygienist must meet specific criteria in order to enter into a collaborative agreement with a dentist. First, the dental hygienist must have been engaged in the active practice of clinical dental hygiene for not less than 2,400 hours in the past 18 months or a career total of 3,000 hours, including a minimum of 200 hours of clinical practice in two of the past three years. In addition, the dental hygienist must have documented participation in courses of infection control and medical emergencies within each continuing education cycle and hold a current CPR certification. The services authorized to be performed are limited to:

- education
- prophylaxis
- application of topical preventive agents such as fluoride and sealants
- polishing and smoothing of restorations
- removal of marginal overhangs
- performance of preliminary charting

- exposing radiographs
- scaling and root planing
- administration of local anesthetic and nitrous oxide inhalation analgesia

However, the dentist may determine which procedures can be performed as designated by the collaborative agreement parameters (Allied Dental Personnel, 2015).

A Minnesota dental hygienist practicing in a collaborative agreement may be employed or retained by a health care facility, program or nonprofit organization to perform the dental hygiene services set forth in the statute. Settings are limited to hospital; nursing home; home health agency; group home serving the elderly, disabled, or juveniles; state-operated facility licensed by the commissioner of human service or the commissioner of corrections; a federal, state, or local public health facility, community clinic, tribal clinic, school authority, Head Start program, or nonprofit organization that serves individuals who are uninsured or who are Minnesota health care public program recipients (Allied Dental Personnel, 2015).

In 2010, the Minnesota Department of Health, Oral Health Program, issued an informal solicitation asking for an assessment of the Minnesota statute “Limited Authorization for Dental Hygienists”. The assessment was funded by a grant from the Health Resources and Services Administration (HRSA), which was awarded to states to support oral health workforce activities. The intent of the

assessment was to improve the collaborative agreement infrastructure, thereby increasing the capacity of current providers and encouraging new providers, as well as to collect and analyze data of Minnesota's oral health workforce. The assessment was conducted from July 2010 through April 2011 and included:

- interviews with collaborative practice dental hygienists, dentists, and other key informants
- review of sample collaborative agreements
- survey of collaborative practice dental hygienists and dentists, as well as a representative sampling of dental hygienists and dentists from the general population
- review of similar programs in other states
- review of background literature
- familiarization with Minnesota's emerging midlevel provider (dental therapist and advanced dental therapist)
- review of existing data on unmet needs for dental services in Minnesota (MOHP, 2011).

Findings disclosed that the number of collaborative agreements in Minnesota is unknown, since according to the statute, registering the agreement is not required. Responses did not match the Minnesota Board of Dentistry voluntary registry. Respondents who said they have a collaborative agreement were not on the board's list, and consequently those who said they do not have a

collaborative agreement were on the board's list. The biggest issue was the uncertainty of respondents as to whether or not they were practicing in a collaborative agreement. Approximately 20% of dental hygienists, who responded, had no knowledge as to whether they were participating in a collaborative agreement (MOHP, 2011).

Though the exact extent of which the "Limited Authorization for Dental Hygienists" is in use is unknown, the findings of this assessment indicated that as little as 2.5 % of Minnesota dental hygienists were involved in a collaborative agreement. The unfortunate finding is that a vast majority of these 2.5 % involved in collaborative agreements reportedly used the agreement only for the ability to expose radiographs on new patients prior to the examination of a dentist in the dental office. This specific use of the collaborative agreement was a recurring theme drawn from survey responses and was noted as the most important feature of a collaborative agreement by many respondents. The concern with this finding is that collaborative agreements are possibly being formed only for this reason, which was not the original intent of the statute. As well, it is fairly unclear as to the effectiveness of the Minnesota direct access model in reaching unserved and underserved populations, as data reporting is also not required and is difficult to track due to the inability for Minnesota dental hygienists to bill Medicaid directly (MOHP, 2011).

Summary

This chapter reviewed the literature surrounding the oral health care crisis in America and gave an overview of direct access, with a presentation of concepts that potentially influence the success of direct access care, such as advancing dental hygiene education, dental hygiene diagnosis, direct reimbursement, self-regulation, and teledentistry. The specifics of the Minnesota Collaborative Agreement were presented, as well as a look at three innovative state models; California, Colorado, and Iowa. For more information regarding the resources utilized in this chapter, see Appendix A for the Literature Review Matrix.

Chapter Three: Methodology

Introduction

The purpose of this research study was to identify the strengths and limitations of the current Minnesota collaborative agreement (Statute 150A.10 subd. 1a “Limited Authorization for Dental Hygienists”) in addressing the oral health needs of unserved and underserved Minnesotans. Through the identification of needs and gaps in the collaborative agreement infrastructure, the research can inform and provide suggested guidelines for quality measures and policy recommendations. This chapter describes the research design and rationale for choice, participant selection, data collection instrumentation, table of specifications, pilot test of data collection instrument, data collection procedures, and data processing and analyses.

Research Design

This qualitative research study was designed to identify the perceptions and recommendations of Minnesota Collaborative Practice Dental Hygienists and members of the Collaborative Dental Hygiene Practice Advisory Committee, in regards to the current “Limited Authorization for Dental Hygienists” Minnesota statute. In this research, interviews were conducted, either in-person or by telephone, to identify themes and obtain answers for the four research questions pertaining to the statute and the overall direct access infrastructure in Minnesota. A qualitative study utilizing interviews for data collection was selected due to the

complexity of the issue and the ability to acquire more in-depth and detailed responses.

Participant Selection

Participants in this research were sampled from Minnesota Collaborative Practice Dental Hygienists and members of the Collaborative Dental Hygiene Practice Advisory Committee. An expert in the field of dental hygiene with specific expertise on the “Limited Authorization for Dental Hygienists” statute and involvement in the Collaborative Dental Hygiene Practice Advisory Committee, was identified. The field expert assisted in recruiting members of the Collaborative Dental Hygiene Practice Advisory Committee, as well as, Collaborative Practice Dental Hygienists, by sending out the recruiting email. See Appendix B for the Participant Recruiting Email.

Participation among each sample group was based upon the ability to reach participants, to gain their consent to be interviewed, and to find a time and means for the interview to be conducted. The initial goal was to interview 10 participants from each group, for a total of 20 participants in the study.

Instrumentation

One instrument was developed to collect data from both groups of study participants: (1) the dental hygienists (2) the members of the advisory committee. The instrument contained a series of 17 open-ended questions that were asked during individual interviews. The interviews were conducted in-person or by telephone, dependent upon the participant’s location, schedule, and preference.

All interviews were conducted by the student investigator, were audio recorded, and lasted approximately 45-60 minutes. See Appendix C for the In-Depth Interview Guide.

The instrument was developed based upon the literature review findings. Questions were asked to identify the perceptions and recommendations of the participants in regards to the current “Limited Authorization for Dental Hygienists” statute, the overall direct access infrastructure in Minnesota, and to specifically answer the four research questions. Questions #1 and #2 of the instrument were created to gather background information on the participants; regarding both professional and educational experiences. The remainder of the questions, questions #3-17, were either directly related to the collaborative agreement statute or the infrastructure surrounding direct access care in Minnesota. The Table of Specifications below indicates how each of the interview questions #3-17, related to the four research questions.

Table of Specifications

Research Question	Interview Questions Used to Assess the Research Questions	Analysis
1. What are the strengths of the current Minnesota Collaborative Agreement (Statute 150A.10 subd. 1a “Limited Authorization for Dental Hygienists”); in addressing the oral health needs of	<p>Q3. What, if any, benefits or opportunities are there to practicing dental hygiene with a Collaborative Agreement?</p> <p>Q7. In order to establish a written Collaborative Agreement with a dentist, the dental hygienist first needs “at least 2,400 hours in the past 18 months or a career total of 3,000 hours, including a minimum of 200 hours of clinical practice in 2 of the past 3 years”.</p>	Themes

<p>unserved and underserved Minnesotans?</p>	<p>How do you feel about the current amount of experience needed prior to a dental hygienist being able to establish a written Collaborative Agreement with a dentist?</p> <p>Q8. Currently, there are no specific educational requirements needed to obtain a Collaborative Agreement, other than the need to have documented participation in courses of infection control and medical emergencies within each continuing education cycle. What are your thoughts about the current educational requirements?</p> <p>Q9. Considering a dentist needs to partner with a dental hygienist in executing a written Collaborative Agreement, how does this potentially play a role, either positively or negatively, in the development and implementation of a Collaborative Agreement?</p> <p>Q12. Registering a Collaborative Agreement with the Minnesota Board of Dentistry is currently voluntary. What are your thoughts about this?</p> <p>Q14. What do you believe are other strengths of a written Collaborative Agreement?</p> <p>Q17. Do you have any final thoughts in regards to the Minnesota Collaborative Agreement that you would like to share?</p>	
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<p>2. What are the limitations of the current Minnesota Collaborative Agreement (Statute 150A.10 subd. 1a “Limited Authorization for Dental Hygienists”); in addressing the oral health needs of unserved and underserved Minnesotans?</p>	<p>Q4. What, if any, specific barriers or challenges can you identify to practicing with a Collaborative Agreement?</p> <p>Q7. In order to establish a written Collaborative Agreement with a dentist, the dental hygienist first needs “at least 2,400 hours in the past 18 months or a career total of 3,000 hours, including a minimum of 200 hours of clinical practice in 2 of the past 3 years”. How do you feel about the current amount of experience needed prior to a dental hygienist being able to establish a written Collaborative Agreement with a dentist?</p> <p>Q8. Currently, there are no specific educational requirements needed to obtain a Collaborative Agreement, other than the need to have documented participation in courses of infection control and medical emergencies within each continuing education cycle. What are your thoughts about the current educational requirements?</p> <p>Q9. Considering a dentist needs to partner with a dental hygienist in executing a written Collaborative Agreement, how does this potentially play a role, either positively or negatively, in the development and implementation of a Collaborative Agreement?</p> <p>Q12. Registering a Collaborative Agreement with the Minnesota Board of Dentistry is currently voluntary. What are your thoughts about this?</p>	<p>Themes</p>
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	<p>Q15. What do you perceive to be other limitations of a written Collaborative Agreement?</p> <p>Q17. Do you have any final thoughts in regards to the Minnesota Collaborative Agreement that you would like to share?</p>	
<p>3. What changes need to be made to the current Minnesota Collaborative Agreement (Statute 150A.10 subd. 1a “Limited Authorization for Dental Hygienists”); to better address the oral health needs of unserved and underserved Minnesotans?</p>	<p>Q5. Currently there are low numbers of dental hygienists that practice with a Collaborative Agreement. What suggestions do you have to improve participation?</p> <p>Q6. What would be the best way to promote and encourage newly graduating dental hygienists to participate in a written Collaborative Agreement with a dentist?</p> <p>Q7. In order to establish a written Collaborative Agreement with a dentist, the dental hygienist first needs “at least 2,400 hours in the past 18 months or a career total of 3,000 hours, including a minimum of 200 hours of clinical practice in 2 of the past 3 years”. How do you feel about the current amount of experience needed prior to a dental hygienist being able to establish a written Collaborative Agreement with a dentist?</p> <p>Q8. Currently, there are no specific educational requirements needed to obtain a Collaborative Agreement, other than the need to have documented participation in courses of infection control and medical emergencies within each continuing education cycle. What are your thoughts about the current educational requirements?</p>	Themes

	<p>Q9. Considering a dentist needs to partner with a dental hygienist in executing a written Collaborative Agreement, how does this potentially play a role, either positively or negatively, in the development and implementation of a Collaborative Agreement?</p> <p>Q11. What, if any, additional functions, currently not approved by rule or statute, should be included under the “Limited Authorization for Dental Hygienists” Minnesota Statute?</p> <p>Q12. Registering a Collaborative Agreement with the Minnesota Board of Dentistry is currently voluntary. What are your thoughts about this?</p> <p>Q13. Various names are used to identify Minnesota dental hygienists providing direct access care, such as “collaborative agreement”, “collaborative practice or collaborative dental hygiene practice”, and even the statute title itself “Limited Authorization for Dental Hygienists”. What title or name would you like for dental hygienists who practice under a written Collaborative Agreement with a dentist in alternative settings?</p> <p>Q16. What additional changes do you think should be made to the “Limited Authorization for Dental Hygienists” Statute or the Collaborative Agreement infrastructure as a whole?</p>	
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	<p>Q17. Do you have any final thoughts in regards to the Minnesota Collaborative Agreement that you would like to share?</p>	
<p>4. What other approaches might assist in increasing direct access care provided by Minnesota dental hygienists?</p>	<p>Q5. Currently there are low numbers of dental hygienists that practice with a Collaborative Agreement. What suggestions do you have to improve participation?</p> <p>Q6. What would be the best way to promote and encourage newly graduating dental hygienists to participate in a written Collaborative Agreement with a dentist?</p> <p>Q10. Currently, Collaborative Practice Dental Hygienists in Minnesota are unable to bill state insurance programs directly for services rendered. How would the ability for a dental hygienist to be directly reimbursed for dental hygiene services provided, impact Collaborative Practice?</p> <p>Q16. What additional changes do you think should be made to the “Limited Authorization for Dental Hygienists” Statute or the Collaborative Agreement infrastructure as a whole?</p> <p>Q17. Do you have any final thoughts in regards to the Minnesota Collaborative Agreement that you would like to share?</p>	<p>Themes</p>

Pilot Test

In order to determine that the instrument was measuring what it was created to measure, content validity was established by a panel of experts, who comprehensively reviewed the content of the instrument. The panel of experts was composed of six dental hygiene educators, who were familiar with the subject matter. In addition, the thesis committee members reviewed the instrument for content face validity. The same data collection and analysis procedures were followed for all participants, therefore increasing the reliability of the instrument.

The interview questions were pilot tested with a dental hygiene educator, who was familiar with the statute. The interview was conducted by telephone and was audio recorded. The interview lasted approximately 45 minutes, in which it was estimated that other interviews would last approximately 45-60 minutes.

Data Collection

Data collection for this study was conducted from February 24-March 12, 2016. The individual interviews were held in-person or by telephone, dependent upon the availability, accessibility, and preference of the participant. Both modes of interviewing were audio recorded. If the interviews were held in-person; a quiet, private and convenient location for the participant was selected. If telephone interviews were conducted, they occurred within my office; locked to ensure privacy, at Normandale Community College. Each interview lasted

approximately 15-60 minutes, with the vast majority lasting 45-60 minutes in length.

Approval for data collection was obtained from the Minnesota State Institutional Review Board MSU, Mankato for the Conduct of Research involving Human Subjects. See Appendix D for a copy of the Institutional Review Board Approval Letter. Each participant was given a consent form in electronic format. See Appendix E for the Informed Consent Document. The consent form contained information on the purpose of the study, potential risks to the participant, and the participants' rights regarding participation in the research. The consent form also informed participants of where they can get answers, if they have questions regarding the interview. In addition, the consent form specified that the interview would be audio recorded. Participants were asked to either print, sign, scan, and email back the informed consent document or they could choose to type their name, as their electronic signature, and email back the consent form prior to the start of the interview.

Data Analysis

Data for this research study was collected from February 24-March 12, 2016. After the data collection period was complete, the data was transcribed and analyzed using NVivo software to identify themes among the participants' responses.

Summary

This chapter described the methodology used in this qualitative research study that assessed the perceptions and recommendations of Minnesota Collaborative Practice Dental Hygienists and members of the Collaborative Dental Hygiene Practice Advisory Committee, in regards to the current “Limited Authorization for Dental Hygienists” statute and the overall infrastructure surrounding direct access care in Minnesota. Through the identification of needs and gaps in the Collaborative Agreement infrastructure, the research can inform and provide suggested guidelines for quality measures and policy recommendations.

Chapter Four: Findings

Introduction

The purpose of this qualitative research study was to identify the strengths and limitations of the current Minnesota collaborative agreement (Statute 150A.10 subd. 1a “Limited Authorization for Dental Hygienists”) in addressing the oral health needs of unserved and underserved Minnesotans. Through the identification of needs and gaps in the collaborative agreement infrastructure, the research can inform and provide suggested guidelines for quality measures and policy recommendations. Seventeen interviews were conducted to obtain answers to the four research questions. Sixteen interviews were conducted by telephone and one was conducted in-person. This chapter describes the participants, the research questions and results, and a summary.

Participants

Seventeen participants from two sample groups were interviewed. Nine of the participants belonged to the Collaborative Dental Hygiene Practice Advisory Committee and the other eight participants were Collaborative Practice Dental Hygienists. All of the participants were female and had a connection to dentistry and/or public health.

Of the nine committee members interviewed, seven were dental hygienists, one was a dentist, and one was not a dental professional, though she has a long history of working in public health, including oral public health. Seven

of these participants have also worked in varying levels of public health, such as working for the Minnesota Department of Health, the Department of Health Services, Indian Health Services, various non-profit and safety net clinics, school-based public health programs, and governmental affairs. Six of the committee members have experience in education; from dental hygiene and dental programs to medical schools. Additionally, many of these participants have experience working with policy, grant writing, research, administration, and serving within their professional organizations (Minnesota Dental Hygiene Association and Minnesota Dental Hygiene Educators' Association). Of the nine committee members interviewed, six have obtained a master's degree and three have doctorate degrees. Educational backgrounds include varying levels of adult/higher education, community health education, public health, public policy, and health administration, in addition to their dental hygiene and/or dental education.

Eight Collaborative Practice Dental Hygienists (CPDHs) were interviewed, each with their own unique professional and educational backgrounds. These participants have been dental hygienists for 10-30 years and have experience working as CPDHs in various settings, such as Federally Qualified Health Centers; community dental and safety net clinics; medical centers, including a mental health facility; a homeless shelter; and non-profit organizations including school-based and church settings. Two of these CPDHs started their own non-profit dental organizations. The CPDHs interviewed serve the following

underserved populations; children, pregnant women, homeless individuals, uninsured adults, special needs individuals, and/or underserved people of all ages. Of the eight CPDHs interviewed, educational backgrounds range from associate's degrees to master's degrees. Three of the CPDHs have continued their education and have obtained master's degrees in advanced dental therapy (i.e., midlevel dental practitioner), and one CPDH earned a master's degree in public health.

Research Questions and Findings

Each of the seventeen research participants were asked the same series of interview questions. See Appendix D for the In-Depth Interview Guide. The interview questions were related to the overall research questions. Presented below are the four research questions and the representative responses obtained from both sample groups.

1. What are the strengths of the current Minnesota Collaborative Agreement (Statute 150A.10 subd. 1a “Limited Authorization for Dental Hygienists”), in addressing the oral health needs of unserved and underserved Minnesotans?

Both groups expressed many similar overall benefits to practicing with a collaborative agreement. The main strength expressed was the ability to expand the delivery of oral health services to those unable to receive it, by going beyond the traditional dental clinic setting. Additionally, the participants expressed that with the ability to practice in alternative settings, the dental hygienist is able to go

where the people are, extending the reach, minimizing barriers that the patient faces such as transportation, and providing a familiar and comfortable setting. Participants indicated that the collaborative agreement allows care to get out further and serve more people in need, specifically those who are uninsured and underserved, in an attempt to provide health equity for all Minnesotans.

We really, through the collaborative agreement model, can offer more health equity to Minnesotans. So, the Minnesota populations that we can reach out to can really help with the concept of health equity within the state. That means that care is available to all, with no limitations, and when you do that you incorporate health literacy concepts and cultural competency. It's just really to say that everyone is entitled to optimal health care. It should be equal across the state, accessible, and quality healthcare for all Minnesotans. –Committee Member

Not only did participants feel that working with a collaborative agreement opens up doors for patients, but also that it opens up doors and possibilities for the dental hygienist. At a professional level, the ability to provide direct access care through a collaborative agreement, expands the role and significance of the dental hygienist. It allows for a dental hygienist to practice to the top of their license and gives the ability to further develop their profession. In addition to the possibilities for professional growth, there can be personal benefits as well. It allows for more autonomy, variation, responsibility, and flexibility, according to the participants. It provides the ability to expand on your dental hygiene skills

and develop new skills by dealing with issues on your own and collaborating with other providers. There is also the opportunity to establish your own career path, such as starting a non-profit organization and being your own boss.

When I started to work with a collaborative agreement, it was great because I was completely responsible for my own schedule, for my patients, how I treated them, and the information I gave them; there is nothing to compare. I think it is fabulous! I feel like it really fulfills what a dental hygienist is trained to do. I don't think you get that working for other people. –CPDH

Both groups identified potential strengths in regards to the need to form a collaborative agreement with a *dentist*. Some of the benefits to the actual collaborative agreement that is formed between a dentist and a dental hygienist, was that it provides guidelines for care, clarification, and the possibility for a referral source. They felt that it is important to form a partnership between a dental hygienist and a dentist and to work as a team.

I think the strength of a collaborative agreement is that it keeps everybody on the same page and that it means that this is not a one size fits all. You can change it over time, to fit the needs of what you are finding and what the needs in your community are. –Committee Member

An identified strength that was unique to the CPDHs was the ability to triage patients. A vast majority of the CPDHs spoke of their regular practice of

triaging patients; identifying which needs are most important and helping the patients get the appropriate follow-up care. The ability to provide that service was a definite strength seen by many of the participant CPDHs.

If they are having an immediate pain level or something of concern, then I can help direct them to the appropriate care. If I know that it is nothing that needs to be extracted, but it is painful for them and it can be restored, then I try to get them an appointment much sooner, than if they were just going for a general overall examination. For documenting in the computer, I will indicate their pain level, as well as if it is emergent, urgent needs, or if it is just a normal examination in terms of needs. So, all of that is in the computer which helps people make their appointments and get them in quicker if needed. –CPDH

In terms of the required hours of experience needed prior to entering into a collaborative agreement with a dentist, the CPDHs in general did not have strong feelings about the required hours, such as being too excessive. A majority of the CPDHs saw the need to have experience, for reasons such as behavioral management of children, the complexities of dental health issues that some adult patients present with, and the ability to triage effectively. The need for some experience prior to entering into a collaborative agreement, overall was seen as a strength according to CPDHs, however many were open to reducing the amount of hours and/or considering mentorship opportunities to reduce barriers to entering into CPDH.

I don't know. That is a lot of hours because I feel like when you graduate you have the skill level and you have the ambition and you have the willingness to work in a non-traditional setting, but I do feel there should be some type of guidance. Possibly some type of mentorship? I think that would be nice. I don't know about the hours. I think they could come down for sure, but I don't know if you would want to say that you don't need any hours because I do want my fellow colleagues to be protected. I don't want them to get into a situation where they feel overwhelmed.
-CPDH

As for the educational requirements to enter into a collaborative agreement, almost all participants were fine with the current requirements, which are the same as the requirements for licensure. They felt that additional education requirements would only restrict this type of practice further. Many discussed the need to have access to more relevant continuing education courses, however they felt that these should be optional and not required, thus a strength of the collaborative agreement.

My preference would be to keep it like this. I really do because I think that if we could start out this way and then maybe as it grows and this becomes hopefully more common, maybe hygienists will see a need for something more. I think since it is not so widely done, that it might be the "cart before the horse". To require more education might be too restricting at this point. Why would we add more requirements at this time? *-Committee Member*

I think it is adequate. I'll be honest, if I had to complete more schooling in order to be a CPDH, I would have went to school for dentistry. I mean, if I would have done more education, that is what I would have went for. I guess for me if they would have said that I have to do this, that, and anything else, to get my collaborative agreement signed, I don't know if I would have done it. I may have pursued a different option. You know and we all are taking CE credits and so forth. –CPDH

2. What are the limitations of the current Minnesota Collaborative Agreement (Statute 150A.10 subd. 1a “Limited Authorization for Dental Hygienists”), in addressing the oral health needs of unserved and underserved Minnesotans?

There were many barriers identified by both groups of participants. One of the key barriers expressed by both groups was the lack of knowledge or understanding by dental professionals, but specifically that of the dentists. Stemming from the lack of education regarding the collaborative agreement and the public health need, were additional barriers, such as unwillingness to sign a collaborative agreement and the fear of liability, competition, and the extra work it could require. As well, it was mentioned that the collaborative dentist can restrict the CPDH to whatever settings and services they are comfortable with.

Well, the way I see it, I think it pretty much depends on where the dentist is coming from. If he is not real happy about doing this and if he is kind of doing it with a lot of reservations, it probably means that the collaborative agreement is going to be really, really detailed, just because

he is uncomfortable with it or maybe he doesn't trust the person he is signing up with. Whereas, if you have someone who really is public health minded and maybe has a good communication already set up with somebody, I think it gives you a little more flexibility with that collaborative agreement. You still can have your basics in there, but I don't think it is fear based. -CPDH

Honestly, I think realistically we should be liable because we are licensed professionals. I don't see why the dentist is liable for everything. I don't know how it works in the medical field. Are doctors liable for everything the nurse practitioner or physician's assistant does? I don't think so, because they have their own licensing board and everything. So, I think that would ideally be the best that we are all licensed and liable for our own thing and then you could work in collaboration with a dentist meaning, that you could refer patients to them or that kind of thing, as opposed to having to be more under their thumb. -CPDH

Two key limitations expressed by almost every CPDH participant, was difficulty in finding a dentist to sign a collaborative agreement and that there is no one to refer to. An additional barrier was reimbursement, not only the low rates and administrative burdens, but the fact that the dentist must be credentialed as a provider to bill, since at this point the Minnesota dental hygienist cannot be directly reimbursed. Credentialing issues hindered some dentists from signing collaborative agreements and the low reimbursement rates played a role in the struggle to find a dentist to refer patients to.

I think the original idea of the collaborative agreement was that it would get care to more people and get them into the system. I think the reality is that dentists don't have to take these people for follow up care. I mean, you are still supposed to refer the people, but the collaborative agreement dentist is not responsible for taking the referrals. So, it is sort of a flaw in the system, really, but that might be the only way you can get dentists to agree sometimes. –CPDH

Initially when my collaborative dentist signed, he didn't want to take any of my patients. He said he would sign for me, but instructed me not to refer any of these medical assistant patients to his clinic. That was not an issue and that actually still stands. -CPDH

How do you make them feel that they want to take the patients that will be identified? That is a tough thing. I am not going to slam dentists that are not willing to have to play on multiple managed care organizations, have to credential with five organizations, give different people the same information over and over again, suffer denied claims, and accept low reimbursement. If these things could be straightened out, then I feel that dentists, particularly in rural areas, may be more interested in forming collaborative agreements. Addressing administrative burdens and reimbursement complexities could go a long way to getting more people involved in collaborative practice. -Committee Member

You know, if it is not profitable to see medical assistance patients, if you are not willing to open your doors of your practice to medical assistance patients, you would be hesitant to sign a collaborative agreement because who is going to do the follow up care? I know they are not required to do the follow-up care, but I feel that many, as I would, feel obligated to do that. –Committee Member

Though the CPDHs were not overly concerned about the required hours being a barrier to the participation of dental hygienists in collaborative agreements, the committee members felt otherwise. Most of the committee members felt that the hours were excessive and either wanted them reduced or completely eliminated, for they saw the hours as limiting new dental hygiene graduates, who may be eager and ready. However, they suggested many modifying factors that could be implemented in the place of the hours, such as allowing the dentist and dental hygienist to determine the time frame, taking into consideration the setting and population to be treated or if telehealth was being utilized, implementing a mentorship program or having another experienced hygienist on-site, and considering different permits or levels of care.

When we first wrote the law, we copied New Mexico's hours, as they were the first state out there to allow direct access care. At that time it was centered on taking calculus off of teeth. So, is it that we forget about these populations until somebody gets the required number of hours? Is it worse that they are not up to speed on some things? So, we got to think of a solution and different pathways, not just one. I think it should be if you graduate with an associates then you do some hours and for someone with a bachelor's degree we could give it a range. I think there needs to be multiple options. We don't want it to be complicated and it has to be pretty clear; not too prescriptive. In 1999, there were only two other direct access states; Maine and New Mexico. Back in the late 1990s, we were begging to find patients for the students that had a lot of calculus. Nowadays, the patient population base has done a complete 180 and it is far more diverse with lots of calculus, advanced periodontal

diseases, and medical complexities. The students these days are ready. You leave school and enter a private practice, you are going to lose all of those skills. It is so routine. You start working on only healthy mouths and you stop using all of your skills. It is just too easy, why would they leave that to go into public health? This new generation is ready. They want to get out there and help the underserved, so why don't we let them?
-Committee Member

Lastly, another limitation seen by nearly every participant, was the lack of emphasis that the Minnesota Board of Dentistry has put on collaborative agreements and that registering a collaborative agreement with the board is not mandated. Mandating registration was proposed by sixteen out of seventeen participants due to concerns regarding lack of clear data to support how many collaborative agreements are currently in use, an understanding of the effect that collaborative agreements are making on access, and what parts of the state are being served and what parts are not. It was also recommended for the purpose of protecting the dental professionals and the public and to aid in notifying people with access issues of nearby services. In addition, it was mentioned many times that a registry would be nice in order to network with other like individuals. As well, it was thought that mandating registration may help increase awareness among other dental professionals.

I understand the value of data collection and I think that somebody needs to be collecting that. I think it ought to be mandated. It seems that the board of dentistry is the logical place to do that, since they handle

licensure. It would be very easy to do. Then there would be an account of who has a collaborative agreement and who no longer has one, but you would have to make sure that people understand what it is because as you know from the study that was conducted by the MDH, some people didn't know if they did or did not have a collaborative agreement. So, I think that it should be mandatory. –Committee Member

I just think it is a good thing to do it. It is important for them to know who is involved with doing this and may be a way for everyone to be tracked. Right now, it sounds like it is hard to tell how many hygienists are actually doing this. So, it would help I think to have more of a mandatory registration. -CPDH

3. What changes need to be made to the current Minnesota Collaborative Agreement (Statute 150A.10 subd. 1a “Limited Authorization for Dental Hygienists”), to better address the oral health needs of unserved and underserved Minnesotans?

In terms of the verbiage contained within the actual statute, most participants felt as though there were important pieces that need to be clarified in order to improve participation. The main concern made by many was the need to clarify the role of the collaborating dentist in terms of liability and responsibility with referrals. There was also mention of the need for clarification surrounding what is considered as a medically compromised patient and perhaps not being so prescriptive on the exact settings. A handful also suggested that it be required that the dental hygienist have their own liability insurance, however all of the

CPDH participants had their own policies, but whether or not these policies specifically cover collaborative practice, was a question.

Another barrier is malpractice. You always hear about that liability piece. I think that is something that needs to be changed and written like Iowa did in their bill. –Committee Member

It's just difficult. Dentists are just not educated about it and they are worried about getting sued. I carry a 4 million dollar liability insurance policy, which is the highest I could get as a non-profit CPDH out on my own, and in any case that did not help with that one dentist. I have been doing this for so long that I have a great rapport with my patients, the underserved populations, so they know me and we have a trust within each other, so have I ever felt threatened like I am going to get sued, absolutely not. However, you and I both know that sometimes you can't judge a book by its cover either, but I was trying to explain that to this senior dentist and he didn't even want to talk about it. Once dentists get their mind set about something, they don't want to change it. –CPDH

The only thing I have heard come up time and time again is the liability issue. Dentists are confused about who is responsible if something goes wrong with the patient. So, I think that needs to be figured out. We need to clarify the liability factor within the statute. Just to make people feel more comfortable. Right now it is a grey area and people say don't worry about it, but I can see where a dentist would be worried about it. –CPDH

I always carry separate liability insurance for myself, but it doesn't cover collaborative practice. It covers for when I work in a regular setting. I am not sure if there are even insurance options that cover collaborative practice. I might be wrong about that. There could maybe be insurance out there that covers that, but I just noticed that mine doesn't. –CPDH

Participants from both groups also felt that the full scope of dental hygiene services should be included, rather than a laundry list of services that may change over time. In addition to allowing a CPDH to practice their full scope, participants had other services that they saw fit to add to the CPDHs scope of practice. The following suggestions are listed in accordance to the most frequently suggested; application of silver diamine fluoride, interim therapeutic restorations, dental hygiene diagnosis and formative treatment planning, capability to prescribe products within the dental hygienists' scope of practice (i.e., fluoride products and antimicrobial mouth rinses) and possibly other prescriptions in consultation with a dentist or other healthcare provider (i.e., antibiotics), ability to refer to specialists (i.e., oral surgeon), and provide screenings and assessments, as well as being able to bill for those services. The need to utilize teledentistry was also brought up on several occasions throughout the interviews.

It would be great if hygienists could do more to help stop the progression of decay, such as applying silver diamine fluoride or interim therapeutic restorations. Doing something to help the patients until they can get to a dentist. –CPDH

I can't refer someone to an oral surgeon. They actually have to go to a dentist to get a referral to an oral surgeon, which is ridiculous. So, it is a barrier for people because they will look at me and go, "Well, I don't have a dentist to go to!" And, I will say, "Well, you can go here, here, or here, but you have to go there to get the referral first." We know if they need an oral surgeon or not and if the oral surgeon doesn't want to treat them then they could send them to a general dentist. It would just save us a step for people, if we could do referrals. –CPDH

The only thing would be the ability to prescribe antibiotics because a lot of the patients that I do see are in high need and they do have infections and we can't get them into a dentist, so again I am trying to keep them out of the ER because that is what the ER is going to do for them. Or, even if we could somehow consult with a dentist and have them fill a prescription. –CPDH

I think it should be absolutely identical to what a dental hygienist can provide in a traditional setting. There should be absolutely no difference. It should be, if they can do it in a dental practice, they should be able to do it in any setting. I mean, they are a licensed provider and they are licensed to do the things they do, so they should be allowed to do it. –Committee Member

Various names are utilized interchangeably to describe dental hygienists providing direct access care in Minnesota. Names such as collaborative practice dental hygiene or collaborative dental hygiene practice, collaborative agreement/practice, and the statute title itself, "Limited Authorization for Dental Hygienists". When asked what title they would prefer to be associated with,

whether it be one of the previously listed titles or perhaps a new title, eight participants preferred Collaborative Practice Dental Hygiene and/or Collaborative Dental Hygiene Practice. At a close second, seven participants would prefer to be referred to as either a Public Health or Community Health Dental Hygienist. Nearly half of the participants, evenly distributed amongst both groups, expressed a dislike for the statute title and recommended renaming it. They felt as though the term “limited” was negative and vague. It was suggested that the statute title be the same as the title that these dental hygienists be referred by.

I think I would love for it to be a Public Health Dental Hygienists, or perhaps a Community Health Dental Hygienist. I think I'd look at Community Health Dental Hygienist. To me it just sounds friendly and open, so something like that. The “Limited Authorization for Dental Hygienists” has got to go. I think whatever we decide to title the statute as, is what these dental hygienists should be called. There are just too many names out there and how weird and limited is that name of the statute; “Limited Authorization for Dental Hygienists”.

—Committee Member

I think the statute title is horrible. It's like what? Limited Authorization, what does that mean? Yes, I think they should change it! Could you call it something people understand? If anything, expanded authorization, not limited authorization. —CPDH

CPDH would be okay with me. I know other people want it to be some sort of public health name or more of a title. I have been okay with the title CPDH because we have used it for a number of years. If we start changing it, then we are confusing the issue again. So, in one way I am ok with it being called that because we know what it is. People who are currently working with it know what it is. –Committee Member

The required hours and education have been previously discussed. Almost unanimously, participants felt that the current educational requirements were adequate and that adding more educational requirements would be counterintuitive. In terms of the hour requirements needed, 2400 hours in the past 18 months, the CPDHs expressed a need for experience and on the other spectrum, the committee members saw the hours as being a barrier. Committee members recommended exploring other options in order to reduce the amount of hours needed, such as allowing the dentist and dental hygienist to determine the time frame, taking into consideration the setting and population to be treated or if telehealth was being utilized, implementing a mentorship or having another experienced hygienist on-site, and considering different permits or levels of care. Once again, some CPDHs were open to the possibility of decreasing the hours and considering mentorships and/or if another experienced dental hygienist was on-site. Additionally, it was already discussed that participants want to see registration of collaborative agreements be mandated by the Minnesota Board of Dentistry.

I know it has to be decreased. I've been thinking about a lot of things, like maybe for the CPDH who is just going to do sealants and fluoride, maybe that person doesn't need as much experience as the one that is determining periodontal treatment or serving more complex medical conditions or whatever. So, maybe we could go as far to look at different levels of CPDH. Like I mentioned before, tier for a new graduate, tier for possibly types of services. You know, just tier based on the complexity. Maybe we are looking at in the situation that we have access to telehealth, maybe with that system of being able to always consult with a dentist, I don't know, maybe it would require fewer hours of experience because you have that back-up mechanism so to speak. So, who knows!? We can be creative. –Committee Member

Perhaps it just has to be that in the process they are in clinical practice and that they have the connection with the collaborative dentist and perhaps even some on-site collaborative work between the two of them so they can really develop their teaming skills, communication, and collaboration. So, you would have the collaborative dental hygienist in the practice setting with the collaborative dentist, for a period of time that they determine is sufficient, where they can work on their philosophies, their communication, their collaboration, and their teaming. So, it would be on-site before the collaborative dental hygienist goes off into an area remote from the dentist. What they could develop with this is confidence and trust in one another and that would work I think with the new grad. It may be good for someone who even has experience, but they are working with someone new. They may need that experience too, to figure out each other. But, I don't know the magic hours. –Committee Member

I think a mentorship would be possible. I think they could look at how they did Dental Therapy. Have the hygienists that agree to mentor the CPDH, put together some type of contract, where they are going to make sure that they are doing the hours and learning the ropes and then have them write proof of a letter that they completed whatever the set mentorship hours are. I would think setting up somehow like that would be really great. You know, like a checklist of things that they have learned and understand, especially when it comes to the billing process and registering the collaborative agreement, and other little things. I think the business side of it is something that needs the most guidance because I know in school you get the skills. You know how to look at the health history, you know how to handle medical emergencies, and you know how to do the services, so I think it is more the business part that really needs the guidance. You know, the forms, how to do referrals, the networking, so that is where a mentorship would be really helpful. Whether that is 6 months or even 3 months, I am not sure. –CPDH

Half of the participants felt it may be more beneficial to direct access and the public, if a new model be explored, such as a model that does not require a collaborative agreement be formed between a dentist and a dental hygienist. In many cases, it was believed that the dentist is perhaps more of a barrier, for many are uneducated and uninterested in participating in collaborative practice. The two most common suggestions were to collaborate with other healthcare professionals such as physicians, pediatricians, and nurse practitioners or partnering with the Minnesota Department of Health.

I think there are barriers in that it requires a dentist to be the collaborating supervisor. I think in this world we need to be more prepared for working in interdisciplinary teams, so we should look for different ways of collaborating with different health professionals.

–Committee Member

I don't think we should have to be overseen by a dentist. For this next change, I know that we are still going to have to be overseen by a dentist, I know we are, but eventually I would like to be part of a broader team. You know, hopefully that still includes a dentist, but I think if you are part of a larger team-based healthcare system, I think that should be adequate. --Committee Member

I think it would really be a leap forward for the public if a physician or a nurse practitioner, could enter into an agreement with CPDH. And I don't know if that would have to mean that it would need to be a three way thing, where there is a collaborating dentist, and then day-to-day you would be working with the nurse practitioner or the physician, but I think getting into medical settings could be a very helpful thing in terms of improving oral health. –Committee Member

At a state level, similar to Iowa, we could employ dental hygienists through the MDH on a regional basis and pair them with local public health. The infrastructure around CHIP state health improvement program and the office of state wide health improvement initiative, should have a dental hygienist on their team. –Committee Member

I keep going back to the idea that we are basing the success of a program on the authority of the dentist to accept it. In other words, we are giving all the power to a non-willing authority. Two choices: 1) accept that and realize the outcomes will continue to be low - the numbers of dentist participation will not increase substantially, despite a possible increase in dental hygiene participation. But if dental hygiene participation increases, where will they find the corresponding increase in pool of dentists?, 2) the more difficult course of action is to change the paradigm to put the authority in an interested party, namely the state. They want to increase access. Have them set up the collaborative program as a wheelhouse where either the state lists areas where dental hygienists can apply to work in or the dental hygienist submits proposals that are approved by the state. The state could then include the authority of the dentist by giving incentives for participation as collaborative dentists that these dental hygienists can confer with. But the problems of a dentist running a program are dissolved because it is the state's program, not the dentists' program. Alternately, they could set up the program to be cooperative between mid-level practitioners (i.e., Dental Therapists/Advanced Dental Therapists) and dental hygienists, and have a pool of dentists that patients could be referred to for procedures a mid-level practitioner could not perform. –CPDH

4. What other approaches might assist in increasing direct access care provided by Minnesota dental hygienists?

One of the key barriers previously presented was the lack of awareness and education among the dental profession, but specifically that of the dentists, in regards to the collaborative agreement. This was an issue that was presented by nearly every participant. In order to increase awareness and education, it was

recommended that dental hygienists and dentists be exposed to it through curricular changes in dental hygiene and dental education, promotion by their professional organizations, specifically the Minnesota Dental Hygiene Association (MnDHA) and the Minnesota Dental Association (MDA), continuing education courses/workshops, having easily accessible resources, networking, and using CPDHs as role models. The idea of utilizing CPDHs as role models for the current dental professionals and students, was recommended by almost all of the CPDHs.

I think that it would be great to educate the dentists and share with them how positive collaborative practice really is. I think a lot of dentists are scared to give so much “power” to hygienists, to let them go out and do this work by themselves, but dentists that live in our community don’t serve this population, so we really aren’t taking anything away from anybody. So, I just think educating dentists and also educating hygienists when they are in school about the option of collaborative practice down the road. I think changing the way the statute is written may help with the dentists. I think it could be a little clearer as to what the collaborative practice dentists’ role is. They are concerned that they have to see these patients. They are concerned about liability. Those are the two big ones it seems. We have had dental hygienists that couldn’t work for us because they couldn’t get a signed agreement. I’ve seen this happen several times and that is just frustrating and unfortunate.

–CPDH

Well, I think the MnDHA is failing our profession by not focusing in on this. I think that the MnDHA should have a collaborative agreement

committee, if not a standing committee, it should be a special committee or task force. Our own profession doesn't even promote it and/or even understand it. I really see the MnDHA as the key support that is missing in terms of what this is all about. You know, the idea that our advisory committee that has pulled together again is getting support from everybody, but the association, is troubling. They should have a public health committee that addresses the opportunities that we have right now. I think that we are just blinded by some of the stuff that is happening out there in the real world around healthcare reforms and the affordable care act, the opportunities for patient centered care.

–Committee Member

I think right now, the stuff that is out there for people who are interested in collaborative agreements, it's like all of the information is there, but it is like a jigsaw puzzle, where all of the pieces are all mixed up in a box, and you have to have somebody show you the outside framework, before you can put those pieces in the middle to figure out what the big picture is going to look like. I think the two biggest pieces that are missing is how to apply for grants and that you have to be a non-profit to do so. For CPDHs that don't have a public health background, one of the things that they need to know is that you have to do all of this leg work upfront that has nothing to do with signing an agreement; you got to develop those relationships. You got to know who to talk to and learn about your community. That is not in any of those documents. –Committee Member

We really need clear instructions, proper networking, and mentoring among even the present CPDHs and dentists. I think we got to make sure that we don't think that hygienists have to pull this, it really should be the dentists promoting this just as much as the hygienists. So, then you go

back to the dental school and you say okay we need some dental school advocates that are encouraging collaborative practice to their new grads, who would then be eager to get involved in public health and team up with the hygienist. –Committee Member

In addition to low awareness and education on collaborative practice across the dental professions and the challenge with getting a collaborative agreement signed, participants also felt that the low numbers of dental hygienists practicing in collaborative agreements across the state could be due to job availability. They expressed that it may not be that dental hygienists don't want to provide direct access care, but that there are not jobs posted. Or, that dental hygienists don't know how or perhaps don't want to start their own non-profit organization in order to provide direct access care. It was suggested that the dental profession target organizations that could employ CPDHs, to educate and raise their interest in the possibility of better serving the oral health needs of their residents, students, program recipients or patients.

I think another thing that we can do to promote this is working with supporters such as the nursing home society, etc. Those are the groups that we need to help them figure out how they can utilize a CPDH. So, I think that would really help improve participation. –Committee Member

I think if we could work it the other way, where we found organizations, or clinics, or anybody that would want to do this and said "if you get a collaborative agreement with a dental hygienist, here is what it could look like for you." Such as showing them how it could save them money

or increase the number of people that they reach. I just really think that would be a really great idea. It's kind of like marketing. I think of it this way, I would never develop a product, without knowing there is a need for it because people that do that generally go broke. Or, they know it is a good idea, but they have to work really hard to sell a product, if there is no need. –Committee Member

I think if there were job opportunities, like being hired by the county, I think then they would be more likely to do that. I don't perceive that this is a problem that the hygienist doesn't want to do it, it's that there aren't employment opportunities. –Committee Member

Currently, Minnesota CPDHs are unable to bill state insurance programs directly for dental hygiene services rendered. The majority of the participants felt as though the ability to be directly reimbursed would greatly impact collaborative agreements. A few were undecided and could not see how this would be beneficial since at this time you need to have a dentist involved or you can bill as a non-profit. Another did not think it would be feasible for a single dental hygienist to be able to navigate these waters on their own. The biggest benefits to having dental hygienists directly reimbursed was that it would alleviate the dentist, streamline the process, and provide clear data on who is providing what services. In addition to allowing dental hygienists to be directly reimbursed, the reimbursement rates and complexities need to be addressed in order to sustain CDHP and aid in providing dentists to refer to.

I think you might have a few that would take advantage of that. I think one of the areas that the MnDHA should be really focusing on is Medicaid coverage for periodontal services. The problem is not so much that they can't bill, but that the services that a hygienist provides might not even be billable. The hygienists are going to be in the same boat as the dentists in terms of the low payment rates. Also, there are the complications of understanding how DHS works. What is reimbursable and what is not. So, you have a CPDH who is out there working and providing services, but the stuff that goes to DHS has to be submitted electronically. With a lot of dental offices, there is one staff person that navigates all of that. That is all they do. It's like really, does an individual hygienist really have the capacity to actually do it? That is another reason that I think working with the system that we currently have, we need the dental office to be the pay to provider to really do it. I am familiar with DHS and I wouldn't have a clue about how to actually submit a claim to DHS. Furthermore, you need to know if the person is enrolled and is a Medicaid recipient, and then if they aren't, you need to know how to navigate the system to get them enrolled. The proportion of patients that are Medicaid recipients, that are fee-for-service, are only about 15% of all Medicaid enrollees. Everything else is in a managed care organization and I think there is something like 11 or 12 of them. I just don't see an individual CPDH being able to make that work. You know, people like Apple Tree Dental can make it work because they have a big system and they know how to bill and they have dedicated staff to do that. —Committee Member

Then we would be able to see how much of a difference we are making to access. If we are billing, we have data then indicating that we are helping these set population groups and then we can make a change with

other laws and other funding. You know, get more funding coming to us, as a direct provider. Which that is always what is so upsetting, dental hygienists are not looked at as a provider for things. You know, less than others. More providers are starting to get out there like chiropractors, and nurse practitioners, and physician's assistants, you know, it is like why aren't we? I think it is because we have had this difficulty billing and showing data. Yeah, we can make an impact, you know. –CPDH

There are just a lot of barriers to actually getting the money into your bank account. One of them is that it takes a while for MA to pay to begin with. The next thing would be that DHS just loves to tell you that you are not eligible or that the person wasn't enrolled at the time or whatever. So, they won't pay on those and you have to resubmit and it takes time to resubmit and write a rebuttal on why this claim needs to be paid. Then, if that payment is being run through a dental office, that also has their business being handled by the front office personnel or office manager, they are not going to prioritize your claims, your measly little MA claims, because their job is to support that clinical practice, not you. So, you are going to be the last person that is dealt with. So, your payment is not only going to be delayed because it is coming through DHS and the front office person has to resubmit any claims that aren't paid, but they are then not even going to cut you a check, for the money that they have brought in from the MA claim, until God knows when! So, to run a business on that basis is very, very difficult. So, I think it is critical.

-Committee Member

If we could bill under us, we could alleviate the dentist and that would be great. I think dentists would be more apt to sign agreements then. It

would be cut and dry and you wouldn't have to worry about adding in the dentist and getting their social security number, which they get upset about, and then you need their license number, and you need everything but a urine sample. You need their NPI number and obviously they are giving this information out, but I just don't know how some hygienists do it because I did have an employee at one time and I had to beg my collaborative dentist to sign her agreement. Personally for me, the benefit would be that I wouldn't have to get specifics from my collaborative dentist in order to bill. I still have to do that as a non-profit. So, basically when we bill, Delta Dental states that my organization is billing, but that the provider is the dentist with their license number, but I will tell you that this provided for issues with my initial collaborative dentist. I was receiving his checks for his restorative procedures and then there were times when we were receiving checks for our organization, but they were written in the dentist's name. So, it is so messed up, that if we could just cut out the middle person, there probably would be less confusion. In addition, every time I call up Delta Dental they are like, "Who am I speaking with? Am I speaking with Dr. Smith or am I speaking with the CPDH? Well, we can't really do anything. We need to have his signature." So then you have to contact your collaborative dentist and say, "Hey, I need your signature, your social security number, your blood type, your NPI number", you know what I'm saying? Think about that. If you are a private practice dentist and you are getting calls from your CPDH asking for all of this information that would be a red flag for me. It is a burden for them. –CPDH

Though not directly asked of participants, five participants (three committee members and two CPDHs) brought up the idea of self-regulation among Minnesota dental hygienists. The idea was if Minnesota dental hygienists

had their own regulatory board and were known as their own entity, they may have an easier time providing preventive care to underserved populations. They suggested looking into other professions that have accomplished this, such as nursing.

I do think that it is really time to do something for our professional identity, and I think collaborative practice, in expanding our role and becoming more independent, is really critical. I, like a lot of other people, think that we should have our own board. That had been explored extensively and got shut down, but it would be great to have what the nurses have and be able to do our own regulation, but that is not in my lifetime. Maybe it will be in your lifetime. You know, when I was in school, I never thought that we would get local anesthesia. That took like 25 years. It takes a long time. It takes people sitting at the table and pounding away. But, yeah, I think collaborative practice would be great for individual hygienists that are not satisfied with doing repetitive work in a clinical setting and being a machine. I do think, not only for hygienists, but I think that it is a necessary practice that really is going to make a dent in providing preventive care. We know that we can prevent caries. I am so sick of us knowing how to prevent caries and we have many very simple methods that we need and we are not doing it. We have the trained personnel, but our overseeing regulatory system is preventing us from providing services that are needed. It should be criminal, you know? We are withholding necessary services from the public because we are so wrapped up in our own little professional protectiveness, that we are not looking out for what patients and the public need. We are over regulated! --Committee Member

Currently, Minnesota dental hygienists are not able to take x-rays on new patients without the dentist first examining the patient. Only dental hygienists practicing with a collaborative agreement are able to take x-rays on new patients without first obtaining a dentist's authorization. This radiation rule has influenced dental practices to form collaborative agreements merely for the ability to allow their dental hygienists to take x-rays on new patients in the dental office, without the dentist first needing to see that new patient. Only one committee member brought up the issue surrounding the radiation rule and the need to change that rule so that large dental practices are not encouraging dental hygienists to enter into collaborative agreements merely for this purpose. This practice was thought to be skewing the data in terms of how many CPDHs are out there providing direct access services to the underserved. It was learned that other participants did not bring up this barrier and the need for change because the committee is in the process of straightening out the radiation rule, thus no longer making it necessary to obtain a collaborative agreement only for the purpose of taking x-rays on new patients prior to a dentist examination.

Themes

Theme 1: Opportunities. Every participant viewed the collaborative agreement as a great opportunity to extend dental hygiene services to those who need it the most. Providing an opportunity for oral health education, prevention, and triaging; for Minnesotans that may otherwise go without these services. The collaborative agreement allows for more individuals to be seen, in settings that

reduce barriers to receiving dental care. Ultimately, the collaborative agreement provides an opportunity to create oral health equity for all Minnesotans.

Beyond opening up doors for unserved and underserved Minnesotans, the collaborative agreement provides opportunities for Minnesota dental hygienists. With a collaborative agreement, the dental hygienist can practice in alternative settings, other than the traditional dental office. The dental hygienist, in collaboration with a dentist, can practice more autonomously and take on more responsibilities, perhaps than they would in a private practice setting. There is also the opportunity for a dental hygienist to establish their own career path by starting a non-profit organization and being their own boss. Furthermore, the collaborative agreement provides the opportunity to expand the role and significance of the dental hygienist in an attempt to improve the oral health of all Minnesotans.

Theme 2: Barriers. Though there are many promising opportunities associated with collaborative practice, there were many barriers presented by participants. Barriers seemed to ultimately stem from a lack of awareness or understanding of the collaborative agreement among dental professionals, but specifically that of Minnesota dentists. The first and foremost barrier was the difficulty in finding a dentist to sign a collaborative agreement. Without a collaborating dentist, the willing dental hygienist cannot provide services to Minnesotans in need. The unwillingness to sign a collaborative agreement may be influenced by a lack of understanding the collaborative agreement and/or the

public health need. Moreover it may be directly related to a fear of liability, competition, extra workload, or low reimbursement rates and high administrative burdens.

After a signature from a collaborating dentist is obtained, the dentist has the authority to limit the collaborative agreement by creating individualized parameters on the allowable settings, population types to be treated, and services to be rendered. Beyond those potential barriers, an additional barrier faced by many of the CPDHs is finding a dentist to refer patients to for additional services outside of the dental hygienists' scope of practice. The collaborating dentist is not obligated to treat any of the patients seen by the CPDH and due to low reimbursement rates and administrative complexities surrounding state insurance programs, many dentists do not open up the doors of their dental practices to state insurance recipients.

An additional barrier surrounding reimbursement is that Minnesota dental hygienists cannot be directly reimbursed by insurance programs for the services that they provide. Although the dental hygienist is in the same boat as the dentist in terms of low reimbursement rates and administrative complexities associated with state insurance programs, even if the dental hygienist still wants to treat these program recipients, they cannot bill as the provider. The dental hygienist must have their collaborative dentist be credentialed with the state insurance programs and bill as the provider. This is also the case for dental hygienists that start their own non-profit organizations; a dentist still must be

credentialed. The barriers surrounding this is that it requires personal information from the dentist, potentially creates more work and headaches for the dentist, and does not allow for data collection on services that the dental hygienist is providing due to the dentist being the billing provider.

Other barriers included the required hours of experience, the lack of emphasis placed on collaborative practice by the Minnesota Board of Dentistry, and even Minnesota dentists. In terms of the required hours of experience, the committee members saw the need for 2400 hours of experience in a 18 month period as excessive and thus limiting the eager and prepared new dental hygiene graduate. Nearly all participants felt that the Minnesota Board of Dentistry should require registration of collaborative agreements for the purpose of having data on how many are in use, what parts of the state are being served, to understand the effect that collaborative agreements are making on access, and to provide some type of registry. Lastly, due to struggles faced in finding dentists that are interested in forming collaborative agreements, suggestions were made to consider partnering with other non-dental healthcare providers or the state of Minnesota.

Theme 3: Education. Due to a lack of awareness and understanding by many dental professionals across the state, including dentists, the need for increasing education was suggested by nearly every participant. One suggested area of focus was within educational programs. It was recommended that both dental hygiene and dental students be exposed to collaborative practice and

public health while in school. It was also suggested that CPDHs be utilized as role models for students by either presenting to their classes or allowing rotation experiences on-site with the CPDH. Additional curricular changes may also need to be considered to best prepare the future dental professionals for caring for an increasingly diverse population in need of oral health services, such as cultural competency and health literacy.

For current dental professionals, opportunities for education need to be brought forth. It was advised that professional organizations, such as the Minnesota Dental Hygiene Association and the Minnesota Dental Association, play a larger role in promoting collaborative practice and providing educational opportunities such as continuing education courses and workshops. It was also stated that there needs to be easy to follow and accessible resources, as well as opportunities for networking with those engaged or interested in providing collaborative practice care. Finally, beyond educating dental professionals, participants expressed that the other partners in the collaborative agreement not be forgotten. The other partners include the organizations or settings that supply the patients, such as a school or a nursing home. It was suggested that the other key partners be educated and made aware of how collaborative practice can better serve their students, residents, program recipients, or patients.

Summary

This chapter provided insight into the research participants' professional and educational backgrounds; the CDHP Advisory Committee Members and the

CPDHs. The four research questions were presented and the findings and identified themes displayed. The major themes consisted of opportunities for underserved populations and dental hygienists; barriers, namely circulating around the difficulty in finding a collaborating dentist and a referral source, as well as liability and reimbursement concerns; and increasing education and promotion of collaborative practice within the dental professional and among potential partners. Many suggestions were brought forth by the study participants such as making revisions to statute language, specifically in terms of clarifying the dentists' role, expanding the dental hygienists' scope of practice, solidifying a name to identify this practice, and possibly making changes to the required hours. Other suggestions included considering different model options, such as interprofessional teaming and/or working with the MDH, creating job availability, allowing for direct reimbursement, and exploring the possibility of self-regulation.

Chapter Five: Discussion, Conclusions, and Recommendations

Introduction

The purpose of this research study was to identify the strengths and limitations of the current Minnesota collaborative agreement (Statute 150A.10 subd. 1a “Limited Authorization for Dental Hygienists”) in addressing the oral health needs of unserved and underserved Minnesotans. Through the identification of needs and gaps in the collaborative agreement infrastructure, this research can inform and provide suggested guidelines for quality measures and policy recommendations. Data for this qualitative research study was collected by interviewing Collaborative Practice Dental Hygienists (CPDHs) and Collaborative Dental Hygiene Practice Advisory Committee Members. An in-depth interview guide, containing 17 interview questions, was utilized for both groups of participants to identify strengths, limitations, and possible changes that need to be made to the Minnesota collaborative agreement statute and/or direct access infrastructure in Minnesota.

Seventeen interviews were conducted between February 24 and March 12, 2016. Sixteen of the interviews were conducted by telephone and one interview was conducted in-person. Each interview lasted approximately 45-60 minutes. Participants were recruited via email by the identified field expert. Participation rates were very high (71%), as nine of the twelve committee members participated and eight of the twelve CPDHs who were emailed the recruiting letter. Informed

consent was emailed to participants and collected electronically prior to conducting the interviews. All interviews were audio recorded, transcribed, and then analyzed utilizing NVivo software. This chapter will discuss the limitations of this research study, present a summary of the findings, draw conclusions from the data, and make recommendations for further research and for health education practice.

Discussion

In all, the perceptions amongst both the CPDHs and the committee members in regards to the collaborative agreement, were rather similar in most respects. Both groups viewed the collaborative agreement positively in terms of extending the reach of dental hygiene services to those who may not have access to traditional dental settings, as well as providing professional and personal benefits for the dental hygienist.

CPDHs liked that the collaborative agreement requires experience. The vast majority felt that experience was needed prior to engaging in this practice, although many were open to requirements that could decrease the hours, but still allow for guidance and growth, such as a mentorship program. In contrast, the committee members favored reducing the required hours, for they perceived the need for experience as a barrier to entering into this type of practice. Committee members presented a number of alternatives to the current hourly experience requirement. Alternatives brought forth by committee members included allowing the dentist and dental hygienist to determine the time frame, taking into

consideration the setting and population to be treated or if telehealth was being utilized, implementing a mentorship or having another experienced hygienist on-site, and considering different permits or levels of care. In terms of the educational requirements needed to have a collaborative agreement, both groups felt the requirement was adequate and that adding additional education requirements would only further hinder dental hygienists from entering into a collaborative agreement.

A benefit unique to the CPDHs was that the collaborative agreement allowed the CPDH to triage patients; prioritizing the patients' needs and aiding in finding the appropriate follow-up services. Both groups identified potential strengths in the need for a dentist to be a part of the collaborative agreement, such as providing guidelines for care, clarification, and a potential referral source. However, the need for a dentist to partner in a collaborative agreement seemed to be associated with many barriers that far outweigh the benefits.

Many barriers to collaborative practice were expressed by both groups of participants. The overall limitation perceived by both groups was the lack of awareness and education among dental professionals, but mainly amongst dentists. The CPDHs perceived this lack of knowledge amongst dentists as a hindrance to getting collaborative agreements signed, for there was a reported general fear among dentists in terms of liability, competition, and the extra work load associated. CPDHs additionally reported the two biggest barriers as having difficulty finding a dentist to sign a collaborative agreement with and having no

one to refer patients to for follow-up care. It was felt that a lack of understanding, fear of liability, and issues with reimbursement played a big role in these two identified barriers.

Many changes were suggested to improve upon the collaborative agreement statute itself, as well as the direct access infrastructure in Minnesota, to better meet the oral health needs of unserved and underserved Minnesotans. Changes specific to the statute, presented amongst both groups, were to clarify the role of dentist in terms of liability and responsibility with referrals, further define the medically compromised patient, and to reduce restrictions on collaborative practice settings. In addition, participants from both groups felt that liability insurance should be required for the dental hygienist and that registering a collaborative agreement with the Minnesota Board of Dentistry should be mandated.

Participants felt as though the CPDH should be able to practice to full scope of license. In addition to allowing the full scope, participants recommended expanding the CPDHs scope. Additions to the scope included application of silver diamine fluoride; interim therapeutic restorations; dental hygiene diagnosis and formative treatment planning; capability to prescribe products within the dental hygienists' scope of practice, such as fluoride products and antimicrobial mouth rinses; additional prescriptions in consultation with a dentist or other healthcare provider, such as antibiotics; ability to refer to

specialists like oral surgeons; and to be able to provide screenings and assessments and have billing privileges for those services.

It was felt that the name or title given to dental hygienists practicing in this manner and the statute title itself could be revised to better reflect direct access care provided by Minnesota dental hygienists. Eight of the participants (three committee members and five CPDHs) favored sticking with Collaborative Practice Dental Hygiene or Collaborative Dental Hygiene Practice, whereas seven participants (four committee members and three CPDHs) preferred changing the name to either Public Health Dental Hygienist or Community Health Dental Hygienist. Eight of the participants (four committee members and four CPDHs) also recommended changing the name of the statute and eliminating the term “limited”. It was suggested that the name of the statute should be the same as the name given to dental hygienists providing direct access care.

The most controversial change to the statute that was suggested by members of both groups, was considering a new model and perhaps partnering with a more interested party, as opposed to forming collaborative agreements with dentists. Two possibilities presented were taking a more interprofessional approach and collaborating with non-dental health professionals or teaming with the state of Minnesota to address the access issues.

Suggestions for changes focused mostly on the overall practice of direct access care and less focused on the actual statute itself, was the need to increase awareness and education amongst the dental profession, creating job

opportunities, addressing reimbursement issues, and considering self-regulation among Minnesota dental hygienists. Increasing awareness and education on collaborative practice within the dental profession was an important need seen by every participant. It was recommended that dental hygienists and dentists be exposed to collaborative practice through curricular changes in dental hygiene and dental education, promotion by their professional organizations, specifically the MnDHA and the MDA, continuing education courses or workshops, having easily accessible resources, networking, and using CPDHs as role models.

In addition to low awareness and education on collaborative practice across the dental professions and the challenge with getting a collaborative agreement signed, participants also felt that the low numbers of dental hygienists practicing in collaborative agreements across the state could be due to job availability. They expressed that it may not be that dental hygienists don't want to provide direct access care, but that there are not jobs posted. Or, that dental hygienists don't know how or perhaps don't want to start their own non-profit organization in order to provide direct access care. It was suggested that the dental profession target organizations that could employ CPDHs, to educate and raise their interest in the possibility of better serving the oral health needs of their residents, students, program recipients or patients.

An important identified barrier to collaborative practice was reimbursement rates and complexities. Currently, Minnesota CPDHs are unable to bill state insurance programs directly for dental hygiene services rendered.

The majority of the participants felt as though the ability to be directly reimbursed would greatly impact collaborative agreements. Four participants were undecided and could not see how this would be beneficial since at this time a collaborative agreement must involve a dentist and dental hygienists can bill as a non-profit. A committee member thought the idea of direct reimbursement sounded good, but did not think it would be feasible for a single dental hygienist to be able to navigate the current billing system on their own. The greatest benefits identified of direct reimbursement to dental hygienists was that it would alleviate the dentists' involvement, streamline the process, and provide clear data on who is providing what services. In addition to allowing dental hygienists to be directly reimbursed, the reimbursement rates and complexities need to be addressed in order to sustain CDHP and aid in providing dentists for referral.

Lastly, though not directly asked of participants, five participants (three committee members and two CPDHs) brought up the topic of self-regulation among Minnesota dental hygienists. The idea was if Minnesota dental hygienists had their own regulatory board and were known as their own entity, they may have an easier time providing preventive care to underserved populations. Participants suggested looking into other professions that have accomplished this, such as nursing.

Conclusion

Direct access provided by dental hygienists is making an impact on the oral health of underserved populations throughout the country. Thirty eight states across the country, including Minnesota, are utilizing the skills of dental hygienists in an attempt to provide preventive dental care to more Americans (ADHA, 2016). Minnesota created a direct access model in 2001, known as the collaborative agreement/practice or the “Limited Authorization for Dental Hygienists” statute, to better meet the oral health needs of all Minnesotans (MOHP, 2011). Though some important changes have been made to the law after its inception, most notably the ability to place sealants without a prior examination by a dentist and the inclusion of nitrous oxide inhalation and local anesthetic, the law has been fairly unchanged since its passage 15 years ago (MOHP, 2011). With the transformations occurring in dental hygiene education, the roles of dental hygienists expanding, and the need for dental care increasing throughout the country, there is no better time than now to consider changes to the statute and the direct access infrastructure in Minnesota.

Although existing research on collaborative practice in Minnesota is limited due to factors that impede data collection and tracking, there are 37 other direct access states to assess for guidance. The literature review presented just three of these direct access states; California, Colorado, and Iowa, in order to identify strengths and possibilities in better providing direct access care to Minnesotans. However, there are many other state models to consider.

Although the collaborative agreement provides many opportunities, there are many barriers that must be addressed in order for the Minnesota model to be successful. The suggestions provided by the study participants can hopefully aid in increasing overall awareness and participation in collaborative practice and strengthen the direct access infrastructure in Minnesota.

Recommendations for Further Research

Further study needs to include the perceptions of Minnesota dentists in regards to the collaborative agreement statute and the surrounding infrastructure. Though dentists and collaborative dentists were surveyed and/or interviewed by the MDH in 2011, an additional study utilizing similar interview questions used in this study, would allow for comparison of the data amongst the different sample groups.

Another study that may be beneficial to collaborative practice is to assess the awareness, beliefs, and attitudes of the other potential partners in a collaborative agreement, towards the possibility of utilizing or teaming up with CPDHs. These other partners could include different healthcare organizations and health professionals in Minnesota.

In terms of the experience requirements needed prior to a Minnesota dental hygienist being able to enter into a collaborative agreement and provide direct access care, many participants mentioned exploring the use of permits or levels of care. Kansas utilizes this concept and has three levels of “extended care” permits that allow the dental hygienist to provide care to different population

groups. Each permit level requires more hours of experience, as well as board approved coursework (ADHA, 2015f). More research could be done on Kansas' model to find out if this is an option that Minnesota would like to explore.

Finally, it may be worth conducting further research on how self-regulation has potentially played a role in the use of direct access care among other states. Although participants mentioned self-regulation among other healthcare professionals such as nurses, there are states that allow self-regulation among dental hygienists, such as the state of California, which should be explored.

Recommendations for Health Education Practice

This study identified the growing oral health care needs throughout the country and within the state of Minnesota. I recommend that health educators increase awareness of the implications of poor oral health and dental access issues, as well as educate the public on prevention. However, the main crucial message is the need to advocate for direct access care to be provided by dental hygienists to people in need, with the least amount of restrictions. Health educators need to come together and support the best interest of the public. They need to be a voice for improving the oral health of all Minnesotans and making quality services accessible to all. An additional area that requires advocacy is the issues surrounding reimbursement. Advocating for increases in the reimbursement rates, the type, and frequencies of billable services by Medicaid, could contribute greatly to improving access to oral health care.

Health educators and related professionals need to continue to work on interdisciplinary approaches and collaboration across the healthcare fields. Dental and medical need no longer be considered as individual entities. The health professions are well aware of the connections between the health of the mouth and the body, so health professionals need to continue to work together to improve the overall health of the public.

Lastly, dental and dental hygiene educators need to make curricular changes to increase awareness and education on collaborative practice and better prepare students to work in public health and/or interdisciplinary settings and to provide quality services to diverse populations. Furthermore, educators and leaders need to utilize their professional organizations as platforms for education and change.

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Appendices

Appendix A: Literature Review Matrix

Authors, Title, Journal	Year of Publication	Highlights	Main Topics
Allied Dental Personnel “150A.10” <i>www.revisor.mn.gov</i>	2015	<ul style="list-style-type: none"> Specific details on the Minnesota Statute 150A.10 Allied Dental Professional, subdivision 1a. Limited Authorization for Dental Hygienists (aka collaborative agreement or collaborative dental hygiene practice) 	MN CDHP Statute
American Dental Association “Action for dental health: Bringing disease prevention into communities” <i>ADA</i>	2013	<ul style="list-style-type: none"> Statistics on oral disease patterns in the U.S. Importance of maintaining dental health through prevention and CDC funding of preventative programs ADAs solution to access to care crisis (i.e., school-based screenings and the Community Dental Health Coordinator 	ADA Prevention Strategies
American Dental Hygienists' Association “Dental hygiene education: Curricula, program enrollment, and graduate information” <i>ADHA</i>	2014	<ul style="list-style-type: none"> Background on dental hygiene, educational requirements, types of programs and degrees awarded, and the job market 	Dental Hygiene Education
American Dental Hygienists' Association “Innovative collaboration models for dental hygiene practice” <i>Access</i>	2014	<ul style="list-style-type: none"> Patricia Braun's (pediatrician) program of collocating 5 Colorado dental hygienists into medical practices Other states' innovative dental hygiene based programs to increase access to care 	Innovative Collaboration Models
American Dental Hygienists' Association “Facts about the dental hygiene workforce in the United States” <i>ADHA</i>	2015	<ul style="list-style-type: none"> Dental hygienists as primary providers of oral health care services Dental hygienists' impact on access to care Oral health crisis Evolution of the dental hygiene profession 	Dental Hygiene Workforce

American Dental Hygienists' Association "Policy manual" <i>ADHA</i>	2015	<ul style="list-style-type: none"> • All terms pertaining to a dental hygienist • ADHA mission, vision statement, and goals • Main policies, code of ethics, licensure, regulation, etc... 	Dental Hygiene Policies and Terminology
American Dental Hygienists' Association "Dental hygiene practice act overview: Permitted functions and supervision levels by state" <i>ADHA</i>	2015	<ul style="list-style-type: none"> • Chart of functions and supervision levels permitted by each state • Delineation between different levels of supervision: direct, indirect, general, and direct access 	Dental Hygiene Scope of Practice & Supervision Levels
American Dental Hygienists' Association "Direct access states" <i>ADHA</i>	2015	<ul style="list-style-type: none"> • Specific details on the 37 states that permit direct access to dental hygienists • Details include titles, requirements, settings, services, provisions, etc... 	Direct Access
American Dental Hygiene Association (ADHA) "Transforming dental hygiene education and the profession for the 21st century" <i>White paper</i>	2015	<ul style="list-style-type: none"> • The future of dental hygiene education and practice; how dental hygienists will contribute to the expansion of oral health services • Access to care crisis • Future oral health workforce projections • Emerging technology 	Dental Hygiene Education Direct access Teledentistry Self-regulation Dental Hygiene Diagnosis Dental Therapy
American Dental Hygienists' Association "Dental hygiene diagnosis state statutes" <i>ADHA</i>	2015	<ul style="list-style-type: none"> • Two states, Colorado and Oregon, permit dental hygiene diagnosis in their scope of practice • Specific details on these states' statutes 	Dental Hygiene Diagnosis

American Dental Hygienists' Association "Dental hygiene: Reimbursement pathways" <i>ADHA</i>	2015	<ul style="list-style-type: none"> • Overview of the payer systems and the dental hygiene reimbursement pathways • Process to apply for reimbursement as dental hygienist providing direct access care 	Direct Reimbursement
American Dental Hygienists' Association "Reimbursement" <i>ADHA</i>	2015	<ul style="list-style-type: none"> • 17 states have rules allowing for dental hygienists providing direct access care to be reimbursed by state Medicaid programs • Listing of the states and their specific parameters around reimbursement 	Direct Reimbursement
American Dental Hygienists' Association "Dental hygiene participation in regulation" <i>ADHA</i>	2015	<ul style="list-style-type: none"> • 18 states have dental hygiene advisory committees or varying degrees of self-regulation for dental hygienists • Specific details on each of the 18 states is provided 	Self-Regulation
American Dental Hygienists' Association "Bills into law 2015" <i>ADHA</i>	2015	<ul style="list-style-type: none"> • Dental hygiene bills enacted into law during 2015 • Once such law is the addition of Interim Therapeutic Restorations (ITR) to the Colorado dental hygiene scope of practice 	2015 Bills ITR
American Dental Hygienists' Association "Direct access 2016: 38 states" <i>ADHA</i>	2016	<ul style="list-style-type: none"> • Map of the 38 states that permit direct access to dental hygienists 	Direct Access
Batrell, A., Lynch, A., Steinbach, P., Bessner, S., Snyder, J., & Majeski, J. "Advancing education in dental hygiene" <i>The Journal of Evidence-Based Dental Practice</i>	2014	<ul style="list-style-type: none"> • Description of the current state of dental hygiene education and the profession • Advancing dental hygiene education is vital to expand access to oral health care • Raise entry level dental hygiene to a BS degree • Increase the diversity of the workforce 	Dental Hygiene Education

<p>Boyleston, E. S., & Collins, M. A.</p> <p>“Advancing our profession: Are higher educational standards the answer?”</p> <p><i>Journal of Dental Hygiene</i></p>	2012	<ul style="list-style-type: none"> • The purpose of this manuscript was to investigate how the professions of physical therapy, occupational therapy, physician assistant, nursing and respiratory therapy have advanced their educational models for entry into practice • Based on these findings, recommendations were made as to how dental hygiene can integrate similar models to advance the profession, such as to create an accreditation council for dental hygiene education and to mandate articulation agreements for baccalaureate degree completion in developing and existing programs • Dental hygiene must continue on the path to advance the profession and gather lessons from other health professions 	Dental Hygiene Education
<p>Braun, P. A., Kahl, S., Ellison, M. C., Ling, S., Widmer-Racich, K., & Daley, M. F.</p> <p>“Feasibility of collocating dental hygienists into medical practices”</p> <p><i>Journal of Public Health Dentistry</i></p>	2013	<ul style="list-style-type: none"> • From December 2008 to April 2009, five RDHs were colocated into medical practices identified for their services to low-income children • Dual-function exam rooms were built in each office • Qualitative interviews and quantitative surveys methods were utilized to evaluate the program • In a 27 month period, 2,071 children received care • Findings suggest that collocating RDHs into medical practices is feasible and an innovative model to provide preventative oral health services to disadvantaged children 	Colorado Innovative Collaboration Model

Centers for Disease Control and Prevention “Oral health: Preventing cavities, gum disease, tooth loss, and oral cancers: At a glance 2011” <i>National Center for Chronic Disease Prevention and Health Promotion, Division of Oral Health.</i>	2011	<ul style="list-style-type: none"> • Defines tooth decay and periodontal disease, which affect millions of Americans • Discusses prevention methods such as fluoridation • The costs of oral health problems • CDC programs and systems to support oral health 	The Burden of Oral Disease
Daniel, S. J., & Kumar, S. “Teledentistry: A key component in access to care” <i>Journal of Evidence Based Dental Practice</i>	2014	<ul style="list-style-type: none"> • Teledentistry has the potential to address oral care needs of those who have limited access to care • May be a promising pathway for providing care where there are shortages of dental providers 	Teledentistry
Dower, C., Moore, J., & Langelier, M. “It is time to restructure health professions scope-of-practice regulations to remove barriers to care” <i>Health Affairs</i>	2013	<ul style="list-style-type: none"> • Existing state-based laws and regulations limit the effective and efficient use of the health workforce by creating mismatches between professional competence and legal scope-of-practice laws and by perpetuating a lack of uniformity in these laws and regulations across states • Highlights reforms needed to strengthen health professions regulation, including aligning scopes of practice with professional competence for each profession in all states; assuring the regulatory flexibility needed to recognize emerging and overlapping roles for health professionals; increasing the input of consumers; basing decisions on the best available evidence and allowing demonstration programs; and establishing 	Laws and Regulations Scope of Practice

		a national clearinghouse for scope-of-practice information	
<p>Eke, P. I., Dye, B. A., Wei, L., Slade, G. D., Thornton-Evans, G. O., Borgnakke, W. S., ...Genco, R. J.</p> <p>“Update on prevalence of periodontitis in adults in the United States: NHANES 2009 to 2012”</p> <p><i>Journal of Periodontology</i></p>	2015	<ul style="list-style-type: none"> • Almost 50% of the U.S. population 30 years and older is affected by periodontitis • It was found most often in males, older adults, lower income and education groups, and smokers • Specific ethnic groups had a higher prevalence of periodontitis such as Hispanics, blacks, and Asians, in comparison to whites 	Prevalence of Periodontitis
<p>“Frequently Asked Questions-Dental Hygiene Program”</p> <p><i>Normandale Community College</i></p>	2013	<ul style="list-style-type: none"> • Provides answers to frequently asked questions concerning the application and admissions processes for entrance into the Normandale Community College Dental Hygiene Program. • Information on how students can simultaneously obtain a BS degree, while enrolled in the traditional AS program; “dual enrollment” with Metropolitan State University. 	Dental Hygiene Dual Enrollment Educational Program
<p>Fried, J.</p> <p>“Interprofessional collaboration: If not now, when?”</p> <p><i>Journal of Dental Hygiene</i></p>	2013	<ul style="list-style-type: none"> • Interprofessional collaboration (IPC) is a driving force behind state-of-the art health care delivery. • Health care experts, governmental bodies, health professions organizations and academicians support the need for collaborative models. • Dental hygienists possess unique qualities that can enhance a collaborative team. 	Interprofessional

		<ul style="list-style-type: none"> • Interprofessional education is essential for IPC 	
<p>Gavett, G.</p> <p>“Tragic results when dental care is out of reach”</p> <p><i>FRONTLINE</i></p>	2012	<ul style="list-style-type: none"> • 12-year-year old Deamonte Driver died after bacteria from an abscessed tooth spread to his brain • 24-year-old father Kyle Willis dies after visiting the ER for a tooth ache, but not being able to afford the recommended medication (pain killers and antibiotic) 	Deaths due to Untreated Dental Disease
<p>Gehrig, J. S. & Willmann, D. E.</p> <p>“Periodontics for the Dental Hygienist (4th ed.)”</p> <p><i>Wolters Kluwer</i></p>		<ul style="list-style-type: none"> • This textbook focuses on the study of the periodontium which are the structures that surround and support the teeth and can become affected by disease (known as periodontal disease) • There is an oral-systemic connection 	Periodontal Disease
<p>Glassman, P.</p> <p>“Virtual dental home”</p> <p><i>Journal of the California Dental Association</i></p>	2012	<ul style="list-style-type: none"> • Innovative dental access model being studied in California, known as the virtual dental home • Developed by the University of Pacific, it is based on the principles of bringing dental care to places where underserved people live, work, or receive social, educational, or general health services • Emphasizes prevention and early intervention strategies • Uses telehealth technology to connect a geographically distributed, collaborative dental team with the dentist at the head of team-making decisions about treatment and location of services 	California VDH
<p>Glassman, P., Harrington, M., Namakian, M., & Subar, P.</p> <p>“The virtual dental</p>	2012	<ul style="list-style-type: none"> • Increasingly large oral health disparities that exist among certain U.S. populations led the IOM to call for expanded research and demonstration of 	California VDH

<p>home: Bringing oral health to vulnerable and underserved populations”</p> <p><i>Journal of the California Dental Association</i></p>		<p>delivery systems that test new methods and technology; the VDH is a system that demonstrates just that.</p> <ul style="list-style-type: none"> • In California, oral health disparities are more severe than the national average, particularly among low-income and disabled populations • In the VDH, dental hygienists such as the RDHAP, collaborate with a dentist who makes diagnostic and treatment decisions to provide care • This model relies on advanced training and community-based practice of a group of allied oral health professionals • Technology (teledentistry) helps bridge the geographic gap between the community provider and the dentist 	
<p>Glassman, P., Subar, P., & Budenz, A. W.</p> <p>“Managing caries in virtual dental homes using interim therapeutic restorations”</p> <p><i>Journal of the California Dental Association</i></p>	2013	<ul style="list-style-type: none"> • The VDH uses allied dental professionals, such as RDHAPs, trained to place Interim Therapeutic Restorations (ITR), under the general supervision of a dentist • Reviews the scientific basis for ITR in managing caries lesions and delivering oral health care to underserved and vulnerable populations 	California VDH ITR
<p>Houser, A., Fox-Grage, W., & Ujvari, K.</p> <p>“Across the states 2012: Profiles of long-term services and supports”</p> <p>AARP Public Policy Institute</p>	2012	<ul style="list-style-type: none"> • Published for the past 18 years, the <i>Across the States</i> series was developed to help inform policy discussions among public and private sector leaders in long-term services and supports throughout the United States. • <i>Across the States 2012</i> presents comparable state- 	Older Adults

		<p>level and national data for more than 140 indicators, drawn together from a wide variety of sources into a single reference.</p> <ul style="list-style-type: none"> • This publication presents up-to-date data and is displayed in easy-to-use maps, graphics, tables, and state profiles. 	
<p>Institute of Medicine and National Research Council</p> <p>“Improving access to oral health care for vulnerable and underserved populations”</p> <p><i>The National Academies Press</i></p>	2011	<ul style="list-style-type: none"> • Lack of access to oral health care contributes to profound and enduring oral health disparities in the U.S. • While many in the U.S. routinely obtained oral health care, oral health eludes many vulnerable and underserved individuals • In 2009, HRSA and the California HealthCare Foundation asked the IOM and the NRC to convene a committee of experts to address access to oral health care in America for underserved and vulnerable populations • This committee was charged to assess the current oral health system, to develop a vision to improve oral health care for these populations, and to recommend strategies to achieve this vision • The committee’s recommendations provide a road map for the important and necessary next steps to improve access to oral health care, reduce disparities, and improve the oral health of the nation 	Access
<p>Iowa Department of Public Health</p> <p>“Inside I-Smile: Annual report on children’s</p>	2014	<ul style="list-style-type: none"> • Statewide initiative working towards access to oral health care for low-income Iowa children, 12 years and under 	Innovative Model: I-Smile Dental Home

oral health in Iowa” <i>Iowa Dept. of P.H.</i>		<ul style="list-style-type: none"> • An interprofessional model that relies on 24 dental hygiene coordinators to accomplish the I-Smile strategies • In comparison to 2005, the I-Smile program has been successful in providing more children preventative dental care, reducing cost, and increasing the number of dentists that bill Medicaid 	
Iowa Department of Public Health “What is I-Smile?” <i>Iowa Dept. of P.H.</i>	2015	<ul style="list-style-type: none"> • State program aimed to help Iowa’s children connect with dental services • Uses a team approach which includes dentists who provide treatment and definitive services, as well as other health professionals such as dental hygienists, physicians, nurses, physician assistants and dietitians. • This additional health providers can provide oral screenings, education, guidance, and preventive services as needed 	Innovative Model: I-Smile Dental Home
Kaiser Commission on Medicaid and the Uninsured “Oral health in the U.S.: Key facts” <i>Kaiser Family Foundation</i>	2012	<ul style="list-style-type: none"> • Key facts on oral health in the U.S. and the disparities that exist • Statistics on oral disease in children and adults, specifically those without dental coverage • Medicare does not provide coverage for routine dental care • Dental Health Provider Shortage Areas discussed 	Statistics on Oral Health in the U.S.
Kaiser Family Foundation “Dental care health professional shortage areas (HPSAs)”	2014	<ul style="list-style-type: none"> • Map and chart delineating the Dental Health Professional Shortage Areas throughout the country • Details on the total designations and 	Dental HPSAs

Kaiser Family Foundation		<p>percentage of unmet need is given by state</p> <ul style="list-style-type: none"> Also, the number of practitioners needed to remove the dental HPSA designation is also specified 	
<p>Mertz, E.</p> <p>“Registered dental hygienists in alternative practice: Increasing access to dental care in California”</p> <p><i>Center for the Health Professions</i></p>	2008	<ul style="list-style-type: none"> This study explores the ways in which reasonable policy modifications may improve utilization of the RDHAP workforce Examines the evolution of the RDHAP practices and their progress in creating and expanding access to care for vulnerable populations Profiles RDHAP workforce in comparison to RDH workforce Explore the practice realities of the RDHAPs Discuss laws specific to the RDHAP and develop policy recommendations 	RDHAP
<p>Mertz, E., & Glassman, P.</p> <p>“Alternative practice dental hygiene in California: Past, present, and future”</p> <p><i>Journal of California Dental Association</i></p>	2011	<ul style="list-style-type: none"> This study examines the development of the RDHAP in California through an analysis of archival documents, stakeholder interviews, and two surveys of the RDHAP After 23 years of testing and implementing, today's RDHAPs have developed viable alternative methods for delivering preventive oral health care to vulnerable populations in a variety of settings 	RDHAP
<p>Minnesota Department of Employment and Economic Development</p> <p>“Detailed occupation data: Dental Hygienists”</p>	2015	<ul style="list-style-type: none"> Projection of Minnesota dental hygiene employment from 2012-2022 is an 11.5% increase 	Minnesota DH Projections

Minnesota Department of Health “Minnesota’s dental hygienists facts and data 2006-2007” <i>Office of Rural Health and Primary Care</i>	2008	<ul style="list-style-type: none"> Background, number of dental hygienists, geographic distribution, gender, race/ethnicity, and age, career plans, education, hours worked, and practice settings 	Minnesota Dental Hygienists Data
Minnesota Department of Health “Minnesota’s dentists 2008” <i>Office of Rural Health and Primary Care</i>	2009	<ul style="list-style-type: none"> Background, number of dentists, geographic distribution, gender, race/ethnicity, and age, career plans, education, hours worked, and practice settings 	Minnesota Dentists Data
Minnesota Department of Health “Third grade oral health basic screening survey” <i>MDH</i>	2011	<ul style="list-style-type: none"> Fact sheet highlighting specific findings from the first Basic Screening Survey (BSS) conducted in 3rd grade students attending Minnesota public schools in 2010 The survey observed the presence of dental caries, fillings, sealants and significant infections that required immediate care 1,766 3rd grade students were assessed at 40 randomly selected public schools 	3 rd Grade Basic Screening Survey
Minnesota Department of Health “Dental/Oral health service use: All adults” <i>MDH</i>	2012	<ul style="list-style-type: none"> Charts showing past year dental visits by year, income, education, and race/ethnicity In 2012, 8 out of 10 adults aged 18 years and older reported visiting a dentist in the past year Adults with lower income (less than \$15,000), lower education, and people of color and Hispanic/Latino decent are less likely to visit a dentist 	MN Adult Dental Use Data

Minnesota Department of Health “Dental/Oral health service use: All children (preventative dental service)” <i>MDH</i>	2012	<ul style="list-style-type: none"> • Chart showing Minnesota children preventive dental use by age for 2011-2012 (75.7% had 1 preventative dental visit, with the highest use among 6-17 year olds) • Chart showing Minnesota children preventive dental use by parental education level (use was higher with higher parent education levels) • Chart showing Minnesota children preventive dental use by poverty level (greater poverty levels increased the use of preventive services, likely due to eligibility for children’s dental coverage through the state) • Chart showing Minnesota children preventative dental use by insurance type (use was 2x as high in households with insurance versus uninsured and higher among private than public insurance holders) 	MN Children Preventive Use Data
Minnesota Department of Health “Dental/Oral health service use: All Medicaid enrollees” <i>MDH</i>	2012	<ul style="list-style-type: none"> • Chart of MHCP recipients who had at least one dental visit in 2012, based on paid MHCP dental claims. • Less than half of recipients had a dental visit in 2012 • Children ages 6-20 were most likely to use the MHCP, with 56% having a dental visit in 2012 	MHCP data
Minnesota Department of Health “Minnesota health profession summaries” <i>MDH</i>	2012	<ul style="list-style-type: none"> • Summary of the number of licensed dentists and dental hygienists by age groups for 2012 	MN Dentists and Dental Hygienists Data for 2012
Minnesota Department of Health “Minnesota oral health plan:	2013	<ul style="list-style-type: none"> • A plan developed by the MDH Oral Health Program staff, partners, and stakeholders that addresses Minnesota’s 	MN Oral Health Plan

Advancing optimal oral health for all Minnesotans (2013-2018)” <i>Oral Health Program</i>		burden of oral disease through the development of goals, objectives, and strategies to reduce oral diseases.	
Minnesota Department of Health “Dental workforce: Dental health professional shortage areas” <i>MDH</i>	2014	<ul style="list-style-type: none"> Dental HPSAs can be geographic (county or service area), demographic (low-income population), and institutional (comprehensive health center, federally qualified health center or other public facility). The majority of dental HPSAs in MN are low-income designations As of June 2014, there are 124 dental HPSAs in 59 MN counties 	Minnesota Dental HPSAs
Minnesota Department of Human Services “Minnesota health care programs” <i>DHS</i>	2014	<ul style="list-style-type: none"> Approximately 862,000 Minnesotans on average received health care coverage through the state’s publicly funded programs in 2012 MHCPs=Medical Assistance (Minnesota’s Medicaid program) and MinnesotaCare Details on each program and the eligibility requirements 	MHCPs
Minnesota Department of Human Services “Critical Access Dental Payment Program (CADPP)” <i>DHS</i>	2014	<ul style="list-style-type: none"> Goal of this program is to support dental practices with a high volume of active MHCP recipients and increase access to dental services for those recipients Eligible providers: (1) Non-profit community clinic (specific criteria), (2) Federally qualified health center (FQHC), rural health clinic (RHC) or public health clinic (PHC), (3) City or county owned hospital dental clinic, (4) 	Reimbursement

		<p>Dental clinic or dental group owned and operated by a non-profit corporation (specific criteria), (5)</p> <p>Dental educational clinic owned and operated by the University of Minnesota or a MNSCU institution, or</p> <p>(6) Private practicing dentist (specific criteria).</p>	
<p>Minnesota Oral Health Program</p> <p>“Collaborative agreement dental hygiene assessment”</p> <p><i>MDH</i></p>	2011	<ul style="list-style-type: none"> Assessment conducted between July 2010 and April 2011 which included interviews with CA dentists and dental hygienists and other key informants, review of sample CAs, survey of CA dentists and dental hygienists as well as a sample of dentists and dental hygienists from the general population, review of similar programs in other states, and a review of the literature. Summary of the findings and recommendations for increasing the use of the limited authorization statute to improve access to preventative dental services in Minnesota 	MN CDHP
<p>Nalliah, R. P., Allareddy, V., Elangovan, S., Karimbux, N., & Allareddy, V.</p> <p>“Hospital based emergency department visits attributed to dental caries in the United States in 2006”</p> <p><i>Journal of Evidence-Based Dental Practice</i></p>	2010	<ul style="list-style-type: none"> A study conducted in 2006 to determine the use of hospital-based emergency departments for dental caries in the U.S. It was found that a total of 330,757 visits were made in 2006, with \$110 million in charges 45% were uninsured and Medicaid was the most common payer for children (53% of all visits) 	ER
<p>National Governors Association</p> <p>“The role of dental hygienists in providing access to oral health care”</p>	2014	<ul style="list-style-type: none"> Summarizes variations in policies affecting dental hygienists and describes some of the alternative provider models and legislation that states have enacted to leverage dental 	<p>Access to care</p> <p>Direct Access</p> <p>Barriers to direct access</p>

<i>NGA Paper</i> (www.nga.org)		hygienists in an expanded capacity	Safety/Quality
No Author “Normandale receives HRSA grant for dental hygiene” <i>Dimensions of Dental Hygiene</i>	2015	<ul style="list-style-type: none"> • Normandale Community College received a \$1.6 million HRSA grant to focus on new workforce models to prepare dental hygienists for expanded scope of practice by changing competencies to meet the oral health care needs of vulnerable, rural, and underserved populations. • One of the tasks is to strengthen the MN collaborative agreement infrastructure 	Dental Therapy HRSA Grant
Oral Health America “State of decay: Are older Americans coming of age without oral healthcare?” <i>OHA</i>	2013	<ul style="list-style-type: none"> • Oral health of older Americans is in a “state of decay” • This document contains a state-by-state analysis of oral health care delivery and public health factors impacting oral health of older Americans • Ratings of “poor”, “fair”, “good” and “excellent” were given by state • More than half of the country received a “poor” or “fair” rating • Ratings were based on the following 5 components: adult Medicaid dental benefits, inclusion of older adults strategies in state oral health plans, loss of teeth, dental HPSAs, and community water fluoridation 	Older Adults
Oral Health America “Older Americans not receiving the oral health care they need” <i>OHA</i>	2013	<ul style="list-style-type: none"> • Ten thousand adults reach retirement age in the United States every day, but only two percent retain dental benefits • As older adults continue to age, other health problems complicate oral care, exacerbating already 	Older Adults

		<p>existing oral health issues, stretching already small budgets, and often making just getting to a dentist difficult</p> <ul style="list-style-type: none"> • According to the survey, almost half of older adults with a household income of \$35,000 or less have not been to the dentist in the past two years • In addition, 35 percent of low-income older adults have gone four years or more between dental visits 	
<p>Pew Center on the States</p> <p>“A costly dental destination” (Issue Brief)</p> <p>PEW</p>	2012	<ul style="list-style-type: none"> • Hospital care for dental conditions means the states “pay dearly” • It was found that there were 830,590 ER visits for preventable dental conditions in 2009—a 16% increase from 2006 • A study found that treating 330,000 cases cost nearly \$100 million • Discusses the cause, why it is significant, and how widespread the problem is, and what can be done 	ER
<p>B. Sanders</p> <p>“Dental crisis in America: The need to expand access”</p> <p><i>Subcommittee on Primary Health and Aging-U.S Senate Committee on Health, Education, Labor, & Pensions</i></p>	2012	<ul style="list-style-type: none"> • Summary of the dental care crisis including statistics, dentist shortages, lack of insurance, the costs, and use of emergency rooms • Potential solutions to increasing access to care such as expanding the workforce, integrating dental services, and promoting prevention and education 	Access
<p>U.S. Census Bureau</p> <p>“The next four decades: The older population in the United States: 2010 to 2050. Population estimates and projections”</p>	2010	<ul style="list-style-type: none"> • A report presenting information on how the age structure of the overall population and the composition of the older population in terms of age, sex, race, and Hispanic origin are expected to 	Older Adults

U.S. Department of Commerce, Economics and Statistics Administration		<p>change over the next four decades</p> <ul style="list-style-type: none"> Between 2010-2015, there is projected to be a rapid growth of older Americans 	
<p>U.S. Department of Health and Human Services</p> <p>“Oral health in America: A report of the surgeon general”</p> <p><i>U.S. Department of Health and Human Services, National Institute of Dental and Craniofacial Research, National Institutes of Health</i></p>	2000	<ul style="list-style-type: none"> The first ever Surgeon General’s report on oral health was released in 2000 The intent was to alert Americans on the full meaning of oral health and its importance to general health and well being The report also outlined safe and effective disease prevention methods Also addresses the inequalities and disparities that exist Working with Health People 2010 goals and objectives, this report proposes solutions that entail National partnerships to maintain and improve oral health for all Americans 	Dental Crisis in America
<p>U.S. Department of Health and Human Services</p> <p>“A national call to action to promote oral health”</p> <p><i>Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention, National Institutes of Health, National Institute of Dental and Craniofacial Research</i></p>	2003	<ul style="list-style-type: none"> The “call to action”, released in 2003, builds upon the Surgeon General’s “Oral Health in America: A Report of the Surgeon General” and the “Healthy People 2010” focus area on oral health Seeks to expand on the previously mentioned efforts by enlisting the expertise of individuals, health researchers and care providers, communities, and policymakers at all levels of society The goals of the “call to action” are to promote oral health, improve quality of life, and eliminate oral health disparities 	Promote Oral Health

<p>U.S Department of Health and Human Services</p> <p>“National and state level projections of dentists and dental hygienists in the U.S., 2012-2025”</p> <p><i>Health Resources and Services Administration, National Center for Health Workforce Analysis</i></p>	2015	<ul style="list-style-type: none"> • Presents national and state-level estimates of supply and demand for dentists and dental hygienists at baseline of 2012 and for 2025 	Projections of Dental Workforce
<p>U.S. Department of Health and Human Services</p> <p>“Fiscal year 2015 budget: Justification of estimates for appropriations committees”</p> <p><i>Health Resources and Services Administration</i></p>	2015	<ul style="list-style-type: none"> • HRSA is the primary Federal agency for improving access to health care services for people who are uninsured, isolated, or medically vulnerable • The 2015 budget targets critical healthcare needs in underserved areas • The Oral Health Training Programs are designed to increase access to culturally competent, high quality dental health services to rural and other underserved communities by increasing the number of oral healthcare providers working in underserved areas and improving training programs for oral health care providers • State Oral Health Workforce Improvement Program (SOHWI) - awards grants to States to help them develop and implement innovative programs to address the dental workforce needs of designated Dental Health Professional Shortage Areas (D-HPSAs) in a manner that is appropriate to the states' individual needs 	2015 HRSA Grants

<p>U.S. Department of Health and Human Services</p> <p>“Dental HPSA designation overview”</p> <p><i>Health Resources and Services Administration</i></p>	<p>n.d.</p>	<ul style="list-style-type: none"> • Explains the three different types of Health Provider Shortage Area (HPSA) designations: geographic area, population groups, and facilities • <u>Geographic</u>: must have a population to FT dentist of at least 5,000:1 or less than 5,000:1 but more than 4,000:1 and has unusually high needs for dental services. These providers are over utilized, excessively distant or inaccessible to the population • <u>Population Groups</u>: reside in a rational service area for delivery of dental services, have access barriers preventing dental use, and have a ratio of at least 4,000:1. Native American tribes are automatically designated and other groups may be if they meet the basic criteria above. • <u>Facilities</u>: be a Federal and/or State correctional institution that has at least 250 inmates and has a 1,500:1 ratio, or be a public and/or non-profit private dental facilities and provide general dental services to an area or population group designated as having a dental HPSA and have insufficient capacity to meet the dental care needs of that area or population group 	
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Appendix B: Participant Recruiting Email

Greetings,

My name is Rachel Kashani-Legler and I am a Community Health Education graduate student at Minnesota State University, Mankato, as well as a registered dental hygienist in the state of Minnesota. You are receiving this email because you have been identified as a current member of the Collaborative Dental Hygiene Practice Advisory Committee or a Collaborative Practice Dental Hygienist and **I would like to invite you to take part in a research study**. The purpose of this study is to assess perceptions of and recommendations for the Minnesota collaborative agreement (MN Statute 150A.10, subd. 1a).

Volunteers will be asked to participate in a personal interview that will be conducted by phone or in-person, based on the participant's preference. The Interview will last 45-60 minutes. Participating in this study will allow for a better understanding of the current strengths and limitations of the collaborative agreement, as well as provide suggestions for potential changes to the statute.

If you have any questions or would like to participate please contact Rachel Kashani-Legler (information noted below). Thank you for your consideration!

Sincerely,

Rachel Kashani-Legler, RDH, RF, BS
Email: rachel.kashani-legler@mnsu.edu
Phone: 952-923-3708

Please note that this project has been reviewed and approved by the Minnesota State University Institutional Review Board (IRB); IRBNet # **871622**

Appendix C: In-Depth Interview Guide

“Minnesota Collaborative Agreement: Potential for Dental Hygienists to Increase Direct Access for Underserved Populations”

Participant #: _____ Date: _____

Method: _____ Interviewer: **Rachel Kashani-Legler**

Introduction

Thank you for agreeing to be interviewed. Your input is valuable and important. This interview is intended to be informal like a conversation.

Purpose

The purpose of this interview is to discuss the Minnesota “Limited Authorization for Dental Hygienists” statute, also known as “Collaborative Agreement” or “Collaborative Dental Hygiene Practice”. In particular, I’d like to discuss how the statute is functioning.

I am conducting this interview as part of my thesis research through Minnesota State University-Mankato. In addition, I am assisting with a HRSA grant project that aims to strengthen the Minnesota Collaborative Agreement.

I am very interested in all of your ideas, comments, suggestions, and experiences. There are no correct or incorrect answers. Please feel free to give your honest opinions and feelings; both positive and negative comments are welcome.

Results from this interview will be combined with other interviews to identify themes and provide suggestions to strengthen the Minnesota Collaborative Agreement.

Procedure

This interview will last 45-60 minutes. I will be audio recording this interview. To ensure confidentiality, your name will not be used during the recording process. This interview is voluntary and you may stop the interview at any time.

I will read you the informed consent form and ask that you sign the consent form, if you choose to proceed with this interview.

There is a lot of content to cover, so I may change the subject or move ahead, but please let me know if you have anything else you would like to add throughout the interview.

1. Tell me about your professional background.

PROBE: What is your current employment position?

2. Tell me about your educational background.

PROBE: What degree(s) do you hold?

3. What, if any, benefits or opportunities are there to practicing dental hygiene with a Collaborative Agreement?

[HAVE THEM RANK THE BARRIERS ACCORDING TO IMPORTANCE: #1 BEING MOST IMPORTANT]

4. What, if any, specific barriers or challenges can you identify to practicing with a Collaborative Agreement?

[HAVE THEM RANK THE BARRIERS ACCORDING TO IMPORTANCE: #1 BEING MOST IMPORTANT]

5. Currently there are low numbers of dental hygienists that practice with a Collaborative Agreement. What suggestions do you have to improve participation?

6. What would be the best way to promote and encourage newly graduating dental hygienists to participate in a written Collaborative Agreement with a dentist?

PROBE: Are there specific skills that are needed?

- 7. In order to establish a written Collaborative Agreement with a dentist, the dental hygienist first needs at least 2,400 hours in the past 18 months or a career total of 3,000 hours, including a minimum of 200 hours of clinical practice in 2 of the past 3 years. How do you feel about the current amount of experience needed prior to a dental hygienist being able to establish a written Collaborative Agreement with a dentist?**

PROBE: What, if any, specific changes should be made?

- 8. Currently, there are no specific educational requirements needed to obtain a Collaborative Agreement, other than the need to have documented participation in courses of infection control and medical emergencies within each continuing education cycle. What are your thoughts about the current educational requirements?**

PROBE: What, if any, specific changes should be made?

- 9. Considering a dentist needs to partner with a dental hygienist in executing a written Collaborative Agreement, how does this potentially play a role, either positively or negatively, in the development and implementation of a Collaborative Agreement?**

PROBE: What do you feel would encourage dentists to establish a written Collaborative Agreement with a dental hygienist?

PROBE: In what ways could the liability factor be lessened?

10. Currently, Collaborative Practice Dental Hygienists in Minnesota are unable to bill state insurance programs directly for services rendered. How would the ability for a dental hygienist to be directly reimbursed for dental hygiene services provided, impact Collaborative Practice?

11. What, if any, additional functions, currently not approved by rule or statute, should be included under the “Limited Authorization for Dental Hygienists” Minnesota Statute?

PROBE: How would these additions to the CPDHs scope of practice, benefit direct access care?

12. Registering a Collaborative Agreement with the Minnesota Board of Dentistry is currently voluntary. What are your thoughts about this? PROBE: How do you feel mandating registration would affect the use of Collaborative Agreements?

PROBE: Who should be responsible for registering and monitoring Collaborative Agreements?

13. Various names are used to identify Minnesota dental hygienists providing direct access care, such as “collaborative agreement”, “collaborative practice or collaborative dental hygiene practice”, and even the statute title itself “Limited Authorization for Dental Hygienists”. What title or name would you like for dental hygienists who practice under a written Collaborative Agreement with a dentist in alternative settings?

PROBE: What suggestions do you have for the various names?

14. What do you believe are other strengths of a written Collaborative Agreement?

15. What do you perceive to be other limitations of a written Collaborative Agreement?

16. What additional changes do you think should be made to the “Limited Authorization for Dental Hygienists” Statute or the Collaborative Agreement infrastructure as a whole?

17. Do you have any final thoughts in regards to the Minnesota Collaborative Agreement that you would like to share?

THANK YOU FOR YOUR TIME! IT IS TRULY APPRECIATED!!!

Appendix D: Institutional Review Board Approval Letter



February 22, 2016

Dear Judith Luebke:

Re: IRB Proposal entitled "[871622-4] Minnesota Collaborative Agreement: Potential for Dental Hygienists to Increase Direct Access for Underserved Populations"
Review Level: Level [II]

Your IRB Proposal has been approved as of February 22, 2016. On behalf of the Minnesota State University, Mankato IRB, we wish you success with your study. Remember that you must seek approval for any changes in your study, its design, funding source, consent process, or any part of the study that may affect participants in the study. Should any of the participants in your study suffer a research-related injury or other harmful outcome, you are required to report them to the Associate Vice-President of Research and Dean of Graduate Studies immediately.

The approval of your study is for one calendar year less a day from the approval date. When you complete your data collection or should you discontinue your study, you must submit a Closure request (see <http://grad.mnsu.edu/irb/continuation.html>). All documents related to this research must be stored for a minimum of three years following the date on your Closure request. Please include your IRBNet ID number with any correspondence with the IRB.

The Principal Investigator (PI) is responsible for maintaining signed consent forms in a secure location at MSU for 3 years following the submission of a Closure request. If the PI leaves MSU before the end of the 3-year timeline, he/she is responsible for following "Consent Form Maintenance" procedures posted online (see <http://grad.mnsu.edu/irb/storingconsentforms.pdf>).

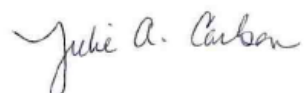
Sincerely,

A handwritten signature in black ink, appearing to read "M Hadley".

Mary Hadley, Ph.D.
IRB Coordinator

A handwritten signature in black ink, appearing to read "Sarah Sifers".

Sarah Sifers, Ph.D. LP
IRB Co-Chair



Julie Carlson, Ed.D.
IRB Co-Chair

This letter has been electronically signed in accordance with all applicable regulations, and a copy is retained within Minnesota State University, Mankato IRB's records.

Appendix E: Informed Consent Document

Title: Minnesota Collaborative Agreement: Potential for Dental Hygienists to Increase Direct Access for Underserved Populations

Primary Investigator: Dr. Judith K. Luebke

Student Investigator: Rachel Kashani-Legler

IRBNet #: 871622

What is the purpose of the study?

You are being invited to take part in a research study designed to assess perceptions of the Minnesota collaborative agreement (MN Statute 150A.10, subd. 1a), which will allow for a better understanding of the current strengths and limitations, therefore providing suggestions for change.

What is the purpose of this form?

This consent form gives you the information you will need to help you decide whether to be in the study or not. Please read the form carefully. You may ask any questions about the research, the possible risks and benefits, your rights as a volunteer, and anything else that is not clear. When all of your questions have been answered, you can decide if you want to be in this study or not. Your participation is voluntary.

Why am I being invited to participate?

You are being invited to take part in this study because you have been identified as a current member of the collaborative dental hygiene practice advisory committee or a collaborative practice dental hygienist in the state of Minnesota. If you choose not to participate or are not eligible, you need not proceed through the interview. Only individuals ages 18 years of age and above are permitted to take part in the interview.

What will happen during this study and how long will it take?

If you agree to take part in this study, your involvement will last for approximately 45-60 minutes. You are being asked to take part in a personal interview. During this interview you will be asked about your professional and educational background, and your perceptions of and recommendations for the collaborative agreement. Your completion of the interview marks the end of your participation in this study. All interviews will be audio recorded.

What are the risks of this study?

There are few reasonably foreseeable risks for participating in the interview. The interview will be recorded with an audio recording device, which means that we will have your voice on tape. However, your name will not be used while recording and only the researchers will have access to the recordings, therefore risks to breach in confidentiality and anonymity are minimized. In addition, all audio recordings will be stored in a password protected computer.

What are the benefits of this study?

If revisions are made to the collaborative agreement (MN Statute 150A.10, subd. 1a), as a result of the research, participants may indirectly benefit due to working closely with or under this statute. Potential benefits to society may include, but are not limited to, increased access to convenient and affordable preventative dental hygiene services, decreased incidence of oral disease and associated systemic conditions, and a decreased cost to the state of Minnesota.

Who will see the information?

The information you provide during this research study will be kept confidential. To help protect your confidentiality, we will ensure that only the primary and student investigators will have access to the data. Your name will NOT be attached to the study nor will any other information capable of personally identifying you. Electronic transcripts and any audio recordings will be stored in a secure location and data in all forms will be destroyed 3 years following the completion of this study. We will take all reasonable steps to protect your identity. If the results of this project are published, your identity will not be made public.

Do I have a choice to take part in this study?

If you decide to take part in this study, it should be because you really want to volunteer. You will not lose any benefits or rights you would normally have if you choose not to volunteer. You can stop the interview, at any time during the interview, by notifying the researcher. You will not be treated differently if you decide to stop taking part in the research study. Participation or nonparticipation will not impact your relationship with Minnesota State University, Mankato.

If you have questions about the treatment of human participants and Minnesota State University, Mankato, contact the IRB Administrator, Dr. Barry Ries, at 507-389-1242 or barry.ries@mnsu.edu.

Thank you for your time and if you have any questions or concerns about this research study, please feel free to contact Dr. Judith K. Luebke (Primary Investigator).

Please save or print a copy of this informed consent document for your future reference.

Contact Information:

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By signing below, I acknowledge that I have reviewed this Informed Consent document, I have had all my questions answered, and I agree to participate in the study.

Name (Print)

Signature

Date